UNITED STATES COPYRIGHT OFFICE

Copyright and Artificial Intelligence

Part 2: Copyrightability

A REPORT OF THE REGISTER OF COPYRIGHTS

JANUARY 2025

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ABOUT THIS REPORT

This Report by the U.S. Copyright Office addresses the legal and policy issues related to artificial intelligence ("AI") and copyright, as outlined in the Office's August 2023 Notice of Inquiry ("NOI").

The Report will be published in several Parts, each one addressing a different topic. This Part addresses the copyrightability of works created using generative AI. The first Part, published in 2024, addresses the topic of digital replicas—the use of digital technology to realistically replicate an individual's voice or appearance. A subsequent part will turn to the training of AI models on copyrighted works, licensing considerations, and allocation of any liability. To learn more, visit www.copyright.gov/ai.

ABOUT THE U.S. COPYRIGHT OFFICE

The U.S. Copyright Office is the federal agency charged by statute with the administration of U.S. copyright law. The Register of Copyrights advises Congress, provides information and assistance to courts and executive branch agencies, and conducts studies on national and international issues relating to copyright, other matters arising under Title 17, and related matters. The Copyright Office is housed in the Library of Congress. Its mission is to promote "creativity and free expression by administering the nation's copyright laws and by providing impartial, expert advice on copyright law and policy for the benefit of all." For more information, visit www.copyright.gov.

PREFACE

In early 2023, the U.S. Copyright Office announced a broad initiative to explore the intersection of copyright and artificial intelligence.

In March of that year, the Office released a policy statement with registration guidance for works incorporating AI-generated content. Over the spring and summer, we hosted a series of online listening sessions, presented educational webinars, and engaged with numerous stakeholders to enhance our understanding of the technology and how it is used, the copyright implications, and the potential impact on businesses and individuals.

These activities culminated in an August 2023 Notice of Inquiry, formally seeking public input on the full range of copyright issues that had been raised. In response, we received more than 10,000 comments representing a broad range of perspectives, including from authors and composers, performers and artists, publishers and producers, lawyers and academics, technology companies, libraries, sports leagues, trade groups and public interest organizations, and even a class of middle school students. Comments came from all 50 states and from 67 countries. That valuable and extensive input, supplemented by additional Office research and information received from other agencies, forms the basis for the discussion and recommendations in this Report.

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EXECUTIVE SUMMARY

This second Part of the Copyright Office's Report on Copyright and Artificial Intelligence ("AI") addresses the copyrightability of outputs generated by AI systems. It analyzes the type and level of human contribution sufficient to bring these outputs within the scope of copyright protection in the United States.

Of the more than 10,000 comments the Office received in response to its Notice of Inquiry ("NOI"), approximately half addressed copyrightability. The vast majority of commenters agreed that existing law is adequate in this area and that material generated wholly by AI is not copyrightable.

Commenters differed, however, as to protection for generative AI outputs that involve some form of human contribution. They expressed divergent views on what types and amounts of contribution could constitute authorship under existing law. Many also stressed the desirability of greater clarity in this area, including with respect to the use of AI as a tool in the creative process.

As a matter of policy, some argued that extending protection to materials created by generative AI would encourage the creation of more works of authorship, furthering progress in culture and knowledge to the benefit of the public. The Office also heard concerns that an increased proliferation of AI-generated outputs would undermine incentives for humans to create.

While recognizing that copyrightability is determined on a case-by-case basis, in this Part the Office sets out the legal principles that govern the analysis and assesses their application to AI-generated content.

Section I identifies the copyrightability issues raised by AI technologies. It outlines the history of adapting copyright law to new technological developments and describes the Office's ongoing AI initiative.

Section II provides a brief background on the technologies involved. It then summarizes the existing legal framework, particularly the human authorship requirement, the idea/expression dichotomy, and the originality standard for copyright protection. After discussing the use of AI to assist authors in the process of creating works of authorship, it analyzes how the law may apply to various types of human contributions to AI-generated outputs: prompting, the inclusion of human-authored expressive inputs, and the modification or arrangement of AI-generated outputs.

Section III reports on the international landscape. It describes how other countries are approaching questions of copyrightability within their own legal systems.

Section IV addresses the policy implications of providing additional legal protection to AI-generated material and evaluates the arguments for and against legislative change.

Based on an analysis of copyright law and policy, informed by the many thoughtful comments in response to our NOI, the Office makes the following conclusions and recommendations:

- Questions of copyrightability and AI can be resolved pursuant to existing law, without the need for legislative change.
- The use of AI tools to assist rather than stand in for human creativity does not affect the availability of copyright protection for the output.
- Copyright protects the original expression in a work created by a human author, even if the work also includes AI-generated material.
- Copyright does not extend to purely AI-generated material, or material where there is insufficient human control over the expressive elements.
- Whether human contributions to AI-generated outputs are sufficient to constitute authorship must be analyzed on a case-by-case basis.
- Based on the functioning of current generally available technology, prompts do not alone provide sufficient control.
- Human authors are entitled to copyright in their works of authorship that are perceptible in AI-generated outputs, as well as the creative selection, coordination, or arrangement of material in the outputs, or creative modifications of the outputs.
- The case has not been made for additional copyright or *sui generis* protection for AI-generated content.

The Office will continue to monitor technological and legal developments to determine whether any of these conclusions should be revisited. It will also provide ongoing assistance to the public, including through additional registration guidance and an update to the *Compendium of U.S. Copyright Office Practices*.[1]

[1] U.S. COPYRIGHT OFFICE, COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES (3d ed. 2021) ("COMPENDIUM (THIRD)").

I. INTRODUCTION

This Part of the Copyright Office's Report on Copyright and Artificial Intelligence addresses the use of AI systems to produce outputs that would be copyrightable if created by a human author.

The use of technology in the production of works of authorship is not new. Authors have used computer-assisted technology for decades to enhance, modify, and add to their creations—expanding their range of expression and advancing the goals of the copyright system. And today they are leveraging advancements in technology to push the boundaries of creativity in exciting ways. Neither the use of AI as an assistive tool nor the incorporation of AI-generated content into a larger copyrightable work affects the availability of copyright protection for the work as a whole. But the capabilities of the latest generative AI technologies[2] raise challenging questions about the nature and scope of human authorship.

These technologies now permit the creation of textual, visual, and sound outputs that resemble the creative works traditionally protected by copyright. Should these outputs also enjoy copyright protection? The answer will turn on the nature and extent of a human's contribution, and whether it qualifies as authorship of expressive elements contained in the output. Finally, to the extent that protection is not available under existing copyright principles, should the law be changed? If so, how?

A. Technology and Copyright

As stated in the legislative history of the 1976 Copyright Act, "[t]he history of copyright law has been one of gradual expansion in the types of works accorded protection."[3]

Over the years, copyright has proven flexible enough to respond to new technologies and mediums as they emerge. Protection has been extended to photographs, motion pictures, video games, and computer programs—to name just a few.[4] At the same time, courts have been called on to explore and analyze the nature of authorship. As authors have increasingly used

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[2] "Generative AI" refers to "application[s] of AI used to generate outputs in the form of expressive material such as text, images, audio, or video." Artificial Intelligence Study: Notice of Inquiry, 88 Fed. Reg. 59942, 59948–49 (Aug. 30, 2023) ("NOI").

[3] H.R. REP. NO. 94-1496, at 51 (1976), *reprinted in* 1976 U.S.C.C.A.N. 5659, 5664.

[4] When Congress extended copyright protection to architecture, it explained that these types of works would be governed by "the general standards of originality applicable for all other copyrightable subject matter." H.R. REP. NO. 101-735, at 21 (1990), *reprinted in* 1990 U.S.C.C.A.N. 6935, 6952. Courts have also applied those standards to claims involving new technology in numerous cases. *See, e.g.*, *Meshwerks, Inc. v. Toyota Motor Sales U.S.A.*, 528 F.3d 1258, 1264–65 (10th Cir. 2008) (then-judge Neil Gorsuch stating "we do not doubt for an instant that the digital medium before us, like photography before it, can be employed to create vivid new expressions fully protectable in copyright"); *Stern Elecs., Inc. v. Kaufman*, 669 F.2d 852, 856–67 (2d Cir. 1982) (audiovisual work); *M. Kramer Mfg. Co. v. Andrews*, 783 F.2d 421, 436 (4th Cir. 1986) (video games); *Tandy Corp. v. Personal Micro Computs., Inc.*, 524 F. Supp. 171, 173 (N.D. Cal. 1981) (computer program and silicon chip).

technology in the process of creation, the relative roles of human and machine can be central to the analysis of copyrightability.

Given its role in registering claims to copyright,[5] the Copyright Office has considerable experience addressing technological developments related to the creation of works of authorship. As early as 1965, developments in computer technology began to raise "difficult questions of authorship," including whether material created using technology is "'written' by computers" or authored by human creators.[6] As then-Register of Copyrights Abraham Kaminstein observed, there is no one-size-fits-all answer:

> The crucial question appears to be whether the "work" is basically one of human authorship, with the computer merely being an assisting instrument, or whether the traditional elements of authorship in the work (literary, artistic, or musical expression or elements of selection, arrangement, etc.) were actually conceived and executed not by man but by a machine.[7]

Because the answer depends on the circumstances of a work's creation, Barbara Ringer (then-Chief of the Examining Division and future Register of Copyrights) noted that the Office could not "take the categorical position that registration will be denied merely because a computer may have been used in some manner in creating the work."[8]

The same analysis applies in the context of AI technology. For a work created using AI, like those created without it, a determination of copyrightability requires fact-specific consideration of the work and the circumstances of its creation. Where AI merely assists an author in the creative process, its use does not change the copyrightability of the output. At the other extreme, if content is entirely generated by AI, it cannot be protected by copyright.[9] Between these boundaries, various forms and combinations of human contributions can be involved in producing AI outputs.

While few bright-line rules are possible in assessing copyrightability, this Part of the Report seeks to shed more light on the relevant considerations.

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[5] The Register of Copyrights is responsible for administering the copyright system, including examining claims for copyright registration. 17 U.S.C. §§ 410(a), 701(a). Although copyright vests automatically in an original work of authorship when fixed in a tangible medium, registration (or its refusal) provides a number of practical and legal benefits, including enabling U.S. copyright owners to enforce their exclusive rights in court. *See generally id.* §§ 106, 408(a), 410(c), 412, 411(a); U.S. Copyright Office, Circular 1: Copyright Basics (Sept. 2021), https://copyright.gov/circs/circ01.pdf.

[6] U.S. COPYRIGHT OFFICE, SIXTY-EIGHTH ANNUAL REPORT OF THE REGISTER OF COPYRIGHTS FOR THE FISCAL YEAR ENDING JUNE 30, 1965, at 5 (1966), https://www.copyright.gov/reports/annual/archive/ar-1965.pdf.

[7] *Id.*

[8] U.S. COPYRIGHT OFFICE, ANNUAL REPORT OF THE Examining Division, Copyright Office, for the Fiscal Year 1965, at 4 (1965), https://copyright.gov/reports/annual/archive/ar-examining1965.pdf.

[9] *See Thaler v. Perlmutter*, 687 F. Supp. 3d 140, 149–50 (D.D.C. 2023).

B. The Copyright Office's AI Initiative

In February 2022, the Copyright Office's Review Board issued a final decision affirming the refusal to register a work claimed to be generated with no human involvement.[10] A year later, the Office issued a registration for a comic book incorporating AI-generated material.[11]

In early 2023, the Office announced the launch of a broad AI Initiative and issued a statement of policy providing guidance on the registration of works incorporating AI-generated material (the "Guidance" or "AI Registration Guidance").[12] The Guidance reiterated the Office's longstanding position that human authorship is an essential requirement for copyright protection in the United States.[13] It explained that if a work contains more than a *de minimis* amount of AI-generated material, the applicant should disclose that information and provide a brief statement describing the human author's contribution.[14]

Since the Guidance was issued, the Office has registered hundreds of works that incorporate AI-generated material, with the registration covering the human author's contribution to the work.[15]

In August 2023, the Office issued a Notice of Inquiry seeking comments on a wide range of copyright law and policy issues arising from the development and use of generative AI.[16] The NOI asked five questions related to the copyrightability of material generated using AI systems:

(1) Does the Copyright Clause in the U.S. Constitution permit copyright protection for AI-generated material?

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[10] U.S. Copyright Office Review Board, *Decision Affirming Refusal of Registration of A Recent Entrance to Paradise* (Feb. 14, 2022), https://copyright.gov/rulings-filings/review-board/docs/a-recent-entrance-to-paradise.pdf.

[11] U.S. Copyright Office, *Cancellation Decision re: Zarya of the Dawn* (VAu001480196) at 5 (Feb. 21, 2023), https://www.copyright.gov/docs/zarya-of-the-dawn.pdf (explaining that registration covered the work's human-authored text as well as the human-authored selection, coordination, and arrangement of the work's written and visual elements, but not images generated by Midjourney that were not the product of human authorship).

[12] Copyright Registration Guidance: Works Containing Material Generated by Artificial Intelligence, 88 Fed. Reg. 16190 (Mar. 16, 2023) ("AI Registration Guidance"). A copy of the guidance is available on the Office's website. U.S. COPYRIGHT OFFICE, COPYRIGHT REGISTRATION GUIDANCE: WORKS CONTAINING MATERIAL GENERATED BY ARTIFICIAL INTELLIGENCE (2023), https://copyright.gov/ai/ai_policy_guidance.pdf.

[13] AI Registration Guidance at 16191–92; *see also Thaler*, 687 F. Supp. 3d at 149–50.

[14] AI Registration Guidance at 16193; *see also* Registration Guidance for Works Containing AI-Generated Content Tr. (June 28, 2023), https://www.copyright.gov/events/ai-application-process/Registration-of-Works-with-AI-Transcript.pdf (webinar on registration of works incorporating AI-generated material).

[15] Registration records are searchable in the Office's public record, including by using keywords and filters to search the Copyright Public Record System. *Copyright Public Records System - Pilot*, U.S. COPYRIGHT OFFICE, https://publicrecords.copyright.gov/ (last visited Jan. 17, 2025).

[16] NOI.

(2) Under copyright law, are there circumstances when a human using a generative AI system should be considered the "author" of the material produced by the system?

(3) Is legal protection for AI-generated material desirable as a policy matter?

(4) If so, should it be a form of copyright or a separate *sui generis* right?

(5) Are any revisions to the Copyright Act necessary to clarify the human authorship requirement?[17]

Approximately fifty percent of the more than 10,000 comments received in response to the NOI addressed one or more of these questions. The Office refers to these comments throughout the discussion below.

[17] *Id.* at 59947–48.

II. AUTHORSHIP AND ARTIFICIAL INTELLIGENCE

A. Technological Background

In the NOI, the Office defined an AI system as a "software product or service that substantially incorporates one or more AI models and is designed for use by an end-user."[18] As components to larger systems, AI models consist of computer code and numerical values (or "weights") designed to accomplish certain tasks, like generating text or images.[19]

Many of today's publicly available AI systems allow for the generation of an output from one or more inputs, such as text, images, audio, video, or a combination of mediums. A "prompt" is a common type of input, often in the form of text, that communicates the desired features of the output.[20] The AI system responds to these inputs by generating an output in the requested format (text, image, audio, video). Prompts typically describe a topic, theme, and/or subject that the user seeks to evoke, and may include the overall style, tone, and/or visual technique. Some are short and simple, such as a request for a "cartoon spaceship." Others are more detailed, requesting a litany of elements. Users may enter a prompt a single time or iteratively, refining it until the system generates an acceptable output.[21]

The practice of crafting prompts that are optimized to elicit a desired result is sometimes called "prompt engineering."[22] Prompts can also be automatically optimized by a generative AI

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[18] NOI at 59948; *see also* James M. Inhofe National Defense Authorization Act for Fiscal Year 2023, Pub. L. 117–263, § 7223(4)(A), 136 Stat. 2395, 3669 (2022) (defining "artificial intelligence system" as "any data system, software, application, tool, or utility that operates in whole or in part using dynamic or static machine learning algorithms or other forms of artificial intelligence").

[19] NOI at 59948–49; *see* ZHANG ET AL., DIVE INTO DEEP LEARNING, ch. 1 (2023), https://d2l.ai/chapter_introduction/index.html (ebook); GARETH JAMES ET AL., AN INTRODUCTION TO STATISTICAL LEARNING WITH APPLICATIONS IN PYTHON, at 404–05 (2023), https://www.statlearning.com/ (ebook) (explaining that the parameters of a neural network are sometimes referred to as "weights").

[20] *See, e.g.*, Leonardo Banh & Gero Strobel, *Generative Artificial Intelligence*, 33:63 ELEC. MKTS. 1, 3 (2023), https://doi.org/10.1007/s12525-023-00680-1 ("*Prompting* . . . enables end users using natural language to engage with and instruct [generative AI] application (e.g., LLMs) to create desired output such as text, images, or other types."); *Prompt*, GENLAW GLOSSARY, https://blog.genlaw.org/glossary.html#prompt ("Most generative-AI systems take [an] input (currently, this is often some text), which is then used to condition the output. This input is called the prompt.") (last visited Jan. 17, 2025); *Image Prompts*, MIDJOURNEY, https://docs.midjourney.com/docs/image-prompts ("You can use images as part of a prompt to influence a Job's composition, style, and colors.") (last visited Jan. 17, 2025); Sander Schulhoff et al., *The Prompt Report: A Systematic Survey of Prompting Techniques* at 5, ARXIV (Dec. 30, 2024), https://arxiv.org/abs/2406.06608 ("A prompt is an input to a Generative AI model, that is used to guide its output.").

[21] Other strategies are more complex, such as "prompt chaining" where a complex prompt is divided into a sequence of intermediate subtasks with a prompt for each step. Robert Clariso & Jordi Cabot, *Model-Driven Prompt Engineering*, IEEE *XPLORE*, 2023, at 48, DOI: 10.1109/MODELS58315.2023.00020.

[22] *See, e.g.*, *id.* at 47; Sander Schulhoff et al., *The Prompt Report: A Systematic Survey of Prompting Techniques* at 7, ARXIV (Dec. 30, 2024), https://arxiv.org/abs/2406.06608.

system that revises or expands them in order to improve the quality of outputs.[23] For example, ChatGPT "automatically generate[s] tailored, detailed prompts for [OpenAI's text-to-image model] DALL·E 3."[24]

As described below,[25] however, the output of current generative AI systems may include content that was not specified and exclude content that was. Although AI technology continues to advance, uncertainty around how a particular prompt or other input will influence the output may be inherent in complex AI systems built on models with billions of parameters.[26] Some observers describe AI as a "black box,"[27] and even expert researchers are limited in their ability to understand or predict the behavior of specific models.[28]

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[23] *See, e.g.*, Siddhartha Datta et al., *Prompt Expansion for Adaptive Text-to-Image Generation* at 4, 14, ARXIV (Dec. 27, 2023), https://arxiv.org/abs/2312.16720 (describing a model that "takes a text prompt as input, . . . and outputs a set of *N* expanded text prompts that include specialized keywords (to improve image quality) and interesting additional details (to add diversity to the generated images"); PROMPTPERFECT, https://promptperfect.jina.ai/ (last visited Jan. 17, 2025); PROMPTIST, https://foundr.ai/product/promptist (last visited Jan. 17, 2025).

[24] *DALL·E 3*, OPENAI, https://openai.com/index/dall-e-3/ (last visited Jan. 17, 2025).

[25] *See infra* notes 84–87 and pp. 24–25.

[26] *See, e.g.*, GARETH JAMES ET AL., AN INTRODUCTION TO STATISTICAL LEARNING WITH APPLICATIONS IN PYTHON, at 23–25 (2023), https://www.statlearning.com/ (ebook) (discussing the fundamental tradeoff between the flexibility and interpretability of statistical learning models, with neural networks as an example of highly flexible and difficult to interpret models); Christian Szegedy et al., *Intriguing properties of neural networks* at 1, ARXIV (Feb. 19, 2024), https://arxiv.org/abs/1312.6199 ("Neural networks achieve high performance because they can express arbitrary computation that consists of a modest number of massively parallel nonlinear steps. But as the resulting computation is automatically discovered[,] . . . it can be difficult to interpret and can have counter-intuitive properties."); Pantelis Linardatos et al., *Explainable AI: A Review of Machine Learning Interpretability Methods*, 23 ENTROPY 1, 1 (Dec. 25, 2020), https://dx.doi.org/10.3390/e23010018 (The "increasing complexity combined with the fact that vast amounts of data are used to train and develop such complex systems, while, in most cases, boost[ing] the systems' predictive power, inherently reduc[es] the[] ability to explain their inner workings and mechanisms. As a consequence, the rationale behind their decisions becomes quite hard to understand and, therefore, their predictions hard to interpret.").

[27] Steven Levy, *AI Is a Black Box. Anthropic Figured Out a Way to Look Inside*, WIRED (May 24, 2024), https://www.wired.com/story/anthropic-black-box-ai-research-neurons-features/ ("When I asked the researchers whether they were claiming to have *solved* the black box problem, their response was an instant and unanimous no."); Lou Blouin, *AI's mysterious 'black box' problem, explained*, UMDEARBORN.EDU NEWS (Mar. 6, 2023), https://umdearborn.edu/news/ais-mysterious-black-box-problem-explained. *See also infra* notes 84–87.

[28] *See, e.g.*, Trenton Bricken et al., *Towards Monosemanticity: Decomposing Language Models With Dictionary Learning*, TRANSFORMER CIRCUITS THREAD (Oct. 4, 2023), https://transformer-circuits.pub/2023/monosemantic-features/index.html ("Mechanistic interpretability seeks to understand neural networks by breaking them into components that are more easily understood than the whole. By understanding the function of each component, and how they interact, we hope to be able to reason about the behavior of the entire network."); Adly Templeton et al., *Scaling Monosemanticity: Extracting Interpretable Features from Claude 3 Sonnet*, TRANSFORMER CIRCUITS THREAD (May 21, 2024), https://transformer-circuits.pub/2024/scaling-monosemanticity/index.html ("Our work has many limitations. Some of these are superficial limitations relating to this work being early, but others are deeply fundamental challenges that require novel research to address.").

In addition, many popular AI systems are unpredictable in the sense that their outputs may vary from request to request, even with an identical prompt.[29] Some systems allow users to control this behavior and generate consistent results by setting a "seed" value, which is a number used to initialize the output generation process.[30] For example, Midjourney users can set a seed (*e.g.*, "123") and receive nearly identical images when repeating the same prompt.[31] Even these systems, however, are not always able to guarantee perfect consistency.[32]

B. Legal Framework

As the Office affirmed in the Guidance, copyright protection in the United States requires human authorship. This foundational principle is based on the Copyright Clause in the Constitution and the language of the Copyright Act as interpreted by the courts. The Copyright Clause grants Congress the authority to "secur[e] for limited times to authors . . . the exclusive right to their . . . writings."[33] As the Supreme Court has explained, "the author [of a copyrighted work] is . . . *the person* who translates an idea into a fixed, tangible expression entitled to copyright protection."[34]

No court has recognized copyright in material created by non-humans, and those that have spoken on this issue have rejected the possibility. In two well-known cases, the Ninth

[29] *See, e.g.*, *Reproducible Outputs*, OPENAI, https://platform.openai.com/docs/advanced-usage/reproducible-outputs (last visited Jan. 17, 2025); Shuyin Ouyang et al., *LLM is Like a Box of Chocolates: the Non-determinism of ChatGPT in Code Generation*, ARXIV (Oct. 17, 2024), https://arxiv.org/abs/2308.02828.

[30] *See, e.g.*, *Reproducible Outputs*, OPENAI, https://platform.openai.com/docs/advanced-usage/reproducible-outputs (last visited Jan. 17, 2025); *Seeds*, MIDJOURNEY, https://docs.midjourney.com/docs/seeds ("The Midjourney bot uses a seed number to create a field of visual noise, like television static, as a starting point to generate the initial image grids. Seed numbers are generated randomly for each image but can be specified with the --seed parameter. If you use the same seed number and prompt, you will get similar final images.") (last visited Jan. 17, 2025).

[31] *Seeds*, MIDJOURNEY, https://docs.midjourney.com/docs/seeds (last visited Jan. 17, 2025).

[32] *See* Alexander Schlögl et al., *Causes and Effects of Unanticipated Numerical Deviations in Neural Network Inference Framework*, *in* ADVANCES IN NEURAL INFORMATION PROCESSING SYSTEMS 36 (A. Oh et al. eds., 2023), https://proceedings.neurips.cc/paper_files/paper/2023/hash/af076c3bdbf935b81d808e37c5ede463-Abstract-Conference.html; *Reproducible Outputs*, OPENAI, https://platform.openai.com/docs/advanced-usage/reproducible-outputs (explaining that users can obtain "mostly" deterministic outputs by setting the same seed value) (last visited Jan. 17, 2025); *Seeds*, MIDJOURNEY, https://docs.midjourney.com/docs/seeds ("Identical --seed values [for certain model versions] will produce *nearly* identical images.") (emphasis added) (last visited Jan. 17, 2025).

[33] U.S. Const. art. I, § 8, cl. 8.

[34] *Cmty. for Creative Non-Violence v. Reid* ("*CCNV*"), 490 U.S. 730, 737 (1989) (emphasis added).

Circuit held that text purportedly "authored by non-human spiritual beings"[35] and photographs that a monkey captured with a camera could not be protected by copyright.[36]

In 2023, the U.S. District Court for the District of Columbia became the first court to specifically address the copyrightability of AI-generated outputs.[37] The plaintiff challenged the Office's refusal to register an image that was described in his application as "autonomously created by a computer algorithm running on a machine."[38] Affirming the Office's refusal, the court stated that "copyright law protects only works of human creation," and that "human authorship is a bedrock requirement of copyright."[39] It found that "copyright has never stretched so far [as] . . . to protect works generated by new forms of technology operating absent any guiding human hand."[40] Because, by his own representation, the "plaintiff played no role in using the AI to generate the work," the court held that it did not meet the human authorship requirement.[41] The decision has been appealed.[42]

In most cases, however, humans will be involved in the creation process, and the work will be copyrightable to the extent that their contributions qualify as authorship. It is axiomatic that ideas or facts themselves are not protectible by copyright law,[43] and the Supreme Court has made clear that originality is required, not just time and effort. In *Feist Publications, Inc. v. Rural Telephone Service Co*., the Court rejected the theory that "sweat of the brow" alone could be sufficient for copyright protection.[44] "To be sure," the Court further explained, "the requisite level of creativity is extremely low; even a slight amount will suffice. The vast majority of

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[35] *Urantia Found. v. Kristen Maaherra*, 114 F.3d 955, 957–59 (9th Cir. 1997) (holding that "some element of human creativity must have occurred in order for the Book to be copyrightable" because "it is not creations of divine beings that the copyright laws were intended to protect"). While the compilation of the book was entitled to copyright, the alleged "divine messages" were not. *Id.*

[36] *Naruto v. Slater*, No. 15-cv-04324, 2016 U.S. Dist. LEXIS 11041, at *10 (N.D. Cal. Jan. 28, 2016) ("[Monkey] is not an 'author' within the meaning of the Copyright Act"), *aff'd*, 888 F.3d 418 (9th Cir. 2018) (finding that monkey cannot sue for copyright infringement).

[37] *Thaler*, 687 F. Supp. 3d 140. A second case challenging the Office's refusal to register an AI-generated output was recently filed. Compl., Allen v. Perlmutter, No. 1:24-cv-2665 (D. Colo. Sept. 26, 2024), Doc. No. 1.

[38] *Thaler*, 687 F. Supp. 3d at 142–43.

[39] *Id.* at 146.

[40] *Id.*

[41] *Id.* at 149–50.

[42] Notice of Appeal, Thaler v. Perlmutter, No. 23-5233 (D.C. Cir. Oct 18, 2023). Oral argument was heard on September 19, 2024.

[43] *See* 17 U.S.C. § 102(b); *Feist Publ'ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 344-45 (1991) (explaining that "[t]he most fundamental axiom of copyright law is that 'no author may copyright his ideas or the facts he narrates'" (quoting *Harper & Row, Publishers, Inc. v. Nation Enters.*, 471 U.S. 539, 556 (1985))).

[44] 499 U.S. at 352–61.

works make the grade quite easily, as they possess some creative spark, 'no matter how crude, humble or obvious' it might be."[45]

More than a century ago, the Court analyzed the nature of authorship in a case involving the then-new technology of the camera. In *Burrow-Giles Lithographic Co. v. Sarony*, the Court considered a constitutional challenge to Congress's extension of copyright protection to photographs.[46] The defendant argued that photographs were not copyrightable because they lacked human authorship; instead, they were the product of a machine.[47]

The Court began its analysis by defining an "author" as "he to whom anything owes its origin; originator; maker; one who completes a work of science or literature."[48] It described copyright as "the exclusive right of a man to the production of his own genius or intellect."[49] Applying this framework, it identified numerous creative contributions made by the photographer, including "posing the [subject] in front of the camera, selecting and arranging the costume, draperies, and other various accessories," "arranging the subject so as to present graceful outlines," and "evoking the desired expression."[50] In sum, the use of a machine as a tool does not negate copyright protection, but the resulting work is copyrightable only if it contains sufficient human-authored expressive elements.

More recently, in cases involving more than one human contributor, courts have grappled with the nature of the contribution necessary to qualify as authorship. The Supreme Court provided additional guidance in the context of a commissioned sculpture. The parties in *Community for Creative Non-Violence v. Reid* ("*CCNV*") disputed who the author of the sculpture was: the nonprofit organization that conceived of it or the artist asked to make it. The Court concluded that the artist's contributions, which included sketching the design and executing his creative vision in a tangible medium of expression, made him an author.[51] In a remand to the trial court to determine whether the organization could be a joint author of the sculpture, the D.C. Circuit made clear that commissioning the sculpture and providing detailed suggestions and directions were insufficient, as such contributions constitute unprotectible ideas.[52]

The Third Circuit engaged in a similar analysis in *Andrien v. Southern Ocean County Chamber of Commerce*. *Andrien* involved an authorship claim by a plaintiff who had asked a

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[45] *Id.* at 345.

[46] 111 U.S. 53, 55–57 (1884).

[47] *Id.* at 56, 59–60.

[48] *Id.* at 57–58 (internal quotation marks omitted).

[49] *Id.* at 58.

[50] *Id.* at 60 (internal quotation marks omitted).

[51] *CCNV*, 490 U.S. at 751–53.

[52] *Cmty. for Creative Non-Violence v. Reid*, 846 F.2d 1485, 1497 (D.C. Cir. 1988).

printer to rescale and print a collection of maps.[53] The plaintiff had "expressly directed the copy's preparation in specific detail," so that the "compilation needed only simple transcription to achieve final tangible form."[54] Because the printer "did not change the substance of [plaintiff's] original expression," the court held that the plaintiff was the author.[55] Applying *CCNV*, it stated that the author is the "party who actually creates the work, that is, the person who translates an idea into an expression that is embodied in a copy by himself or herself, or who authorizes another to embody the expression in a copy."[56]

Although an AI-generated output cannot be considered a joint work with respect to the user and AI system,[57] joint authorship provides a helpful analogy in assessing whether a party contributed sufficient expression to be considered an author.[58] To be a joint author, one must make a copyrightable contribution.[59] "A person who merely describes to an author what the

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[53] 927 F.2d 132, 133 (3d Cir. 1991) (Under plaintiff's direction, the printer's work "included coordinating the scales, relettering the street names and adding designations for the diving sites as well as for local points of interest.").

[54] *Id.* at 135.

[55] *Id.* at 135–36. *Cf. S.O.S., Inc. v. Payday, Inc.*, 886 F.2d 1081, 1086–87 (9th Cir. 1989) (rejecting an authorship claim from a party who commissioned software noting that "[t]he supplier of an idea is no more an 'author' of a program than is the supplier of the disk on which the program is stored"); *M.G.B. Homes, Inc. v. Ameron Homes Inc.*, 903 F.2d 1486, 1493 (11th Cir. 1990) (providing sketches and ideas did not render client an "author" of the finished expression); *Geshwind v. Garrick*, 734 F. Supp. 644 (S.D.N.Y. 1990) (producer was not the author where he "wanted changes in details and aspects of the [animation clip] and even made suggestions," but did not materially constrain the animator's expression or otherwise influence how the animator executed the instructions), *vacated in part on other grounds*, 738 F. Supp. 792 (S.D.N.Y. 1990), *and aff'd*, 927 F.2d 594 (2d Cir. 1991); *Whelan Assocs. v. Jaslow Dental Lab'y*, 609 F. Supp. 1307, 1318–19 (E.D. Pa. 1985) ("general assistance and contributions to the fund of knowledge" do not make one "a creator of any original work"), *amended*, 609 F. Supp. 1325 (E.D. Pa. 1985), *aff'd*, 797 F.2d 1222 (3d Cir. 1986), *and cert. denied*, 479 U.S. 1031 (1987).

[56] *Andrien*, 927 F.2d at 134–35 ("When one authorizes embodiment, that process must be rote or mechanical transcription that does not require intellectual modification or highly technical enhancement.").

[57] A "joint work" is "a work prepared by two or more authors with the intention that their contributions be merged into inseparable or interdependent parts of a unitary whole." 17 U.S.C. § 101 (defining "joint work"). Because an AI system is not a human being, it cannot be considered an "author" in collaboration with a user. *See* Kernochan Center for Law, Media and the Arts ("Kernochan Center"), Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 6–9 (Oct. 30, 2023) ("Kernochan Center Initial Comments") (noting that machines are not "authors" within the meaning of the Copyright Act, nor are they capable of forming an intention to merge their output with the contributions from the user that interacts with these systems).

[58] *See* The Authors Guild, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 33 (Oct. 30, 2023) ("The Authors Guild Initial Comments") ("Areas of the law that will instruct courts in how to determine what is copyrightable in an AI-assisted human-created work or human-assisted AI-generated material include . . . joint work cases where the issue of whether a secondary creator contributed a sufficient amount to rise to the level of an author . . . .").

[59] *Brownstein v. Lindsay*, 742 F.3d 55, 64 (3d Cir. 2014) ("For two or more people to become co-authors, each author must contribute some non-trivial amount of creative, original, or intellectual expression to the work and both must intend that their contributions be combined."); *Ashton-Tate Corp. v. Ross*, 728 F. Supp. 597 (N.D. Cal. 1989) (finding that a contribution to a joint work must be protectable in itself and that only expressions of ideas, not ideas themselves, give rise to protected interest), *aff'd*, 916 F.2d 516, 521 (9th Cir. 1990).

commissioned work should do or look like is not a joint author for purposes of the Copyright Act."[60]

The following sections apply these legal principles in the context of generative AI systems. After describing uses of computer-assisted tools in the creation process, we discuss the following three kinds of human contribution to AI-generated outputs: (1) prompts that instruct an AI system to generate an output; (2) expressive inputs that can be perceived in AI-generated outputs; and (3) modifications or arrangements of AI-generated outputs.[61]

C. Assistive Uses of AI Systems

Many commenters expressed concern about continuing the longstanding and growing use of computer-assisted tools in the creation process.[62] They pointed to various tasks that have been performed in creative fields for years, some of which now incorporate recent developments in AI, such as "aging" or "de-aging" actors, identifying chord progressions, detecting errors in software code, and removing unwanted objects or crowds from a scene.[63]

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[60] *Payday*, 886 F.2d at 1087; *see also Sullivan v. Flora, Inc.*, 936 F.3d 562 (7th Cir. 2019) (upholding jury finding that plaintiff and defendant were not joint authors of illustrations because defendant merely offered suggestions on color, style, and text and rough outlines and sketches to guide the plaintiff's work, while the plaintiff used digital design software to create the illustrations, sometime incorporating defendant's suggestions and other times not); *BancTraining Video Sys. v. First American Corp.*, No. 91-cv-5340, 1992 U.S. App. LEXIS 3677, at *12 (6th Cir. 1992) ("Providing sketches, ideas or supervision over copyrightable material is not sufficient to make one a joint author.").

[61] Of course, many cases may involve a combination of two or more of these types of contributions. For example, a user could make creative modifications to an output generated using their own expressive input and multiple prompts.

[62] Commenters from the music industry noted that musicians and sound engineers have used such tools for many years, citing Autotune as one example. Songwriters of North America, et al., Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 6 (Oct. 30, 2023); *see also* Recording Academy, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 1 (Oct. 30, 2023) ("Recording Academy Initial Comments"). In the software industry, programmers and computer engineers use automated tools to modify software code, such as to perform refactoring and translate from one programming language into another. Apple Inc., Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 3–4 (Oct. 30, 2023) ("Apple Initial Comments").

[63] For example, commenters reported that musicians are beginning to use AI systems for developing beats or mixing a track. *See* Recording Academy Initial Comments at 3; *see also* Universal Music Group ("UMG"), Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 5–7 (Oct. 30, 2023) ("UMG Initial Comments"); Dina LaPolt, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 7 (Oct. 30, 2023) ("Dina LaPolt Initial Comments"). Motion picture companies use AI tools as part of their creative process, particularly in the context of visual effects and post-production. For example, these tools may be used for color correction, detail sharpening, or de-blurring. Motion Picture Association ("MPA"), Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 37–38 (Oct. 30, 2023) ("MPA Initial Comments"); *see also* Holton Lemaster, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry (Aug. 31, 2023) ("AI as a support tool for artists who choose to use them in their creation pipeline is fine. Crowd removal from photos, video stabilization tools, and ray tracing are all tools that really shine when enhanced by AI."). AI tools are frequently used in a process called rotoscoping, a time-consuming task that involves "altering individual frames within a single shot to align live-action and computer-generated images." MPA Initial Comments at 6, 37–38.

Commenters argued that these types of uses of AI should not affect the availability of copyright protection for the output.[64]

The Office agrees that there is an important distinction between using AI as a tool to assist in the creation of works and using AI as a stand-in for human creativity. While assistive uses that enhance human expression do not limit copyright protection, uses where an AI system makes expressive choices require further analysis. This distinction depends on how the system is being used, not on its inherent characteristics.[65]

Commenters also identified situations where creators have begun to experiment with using AI as a brainstorming tool. The Recording Academy, for instance, stated that "[m]any Academy members already use generative AI as a tool to assist them in creating new music," including through song ideation.[66] Another stakeholder noted that AI can be used to structure or create a preliminary outline for literary works.[67] In these cases, the user appears to be prompting a generative AI system and referencing, but not incorporating, the output in the development of her own work of authorship. Using AI in this way should not affect the copyrightability of the resulting human-authored work.[68]

D. Prompts

1. Commenters' Views

Many of the comments received in response to the NOI focused on the legal implications of creating outputs by providing prompts to an AI system. At the outset, as several

[64] *See, e.g.*, Intellectual Property Owners Association ("IPO"), Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 6–7 (Oct. 30, 2023) ("IPO Initial Comments") ("[I]t is desirable to provide copyright protection for works resulting from a human using an AI system as a tool of creativity and where that human activity satisfies the traditional requirements of human authorship. A lack of this protection would be detrimental to rights holders and creators alike.").

[65] One commenter urged the Office to adopt a distinction based on the type of AI platform a user employs. Scenario, Inc., Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 6 (Oct. 18, 2023) ("Scenario Initial Comments") (arguing that output generated by a multimodal generative AI platform should presumptively be deemed copyrightable, while output generated by a unimodal generative AI platform should presumptively be deemed uncopyrightable).

[66] Recording Academy Initial Comments at 10.

[67] Literary Works Listening Session Tr. at 31:18–23 (Apr. 19, 2023) (statement by Mary Rasenberger, The Authors Guild).

[68] Other examples of such uses provided by commenters include digital and copy editing and other uses that "are intended to assist, not displace, human creativity." Recording Academy Initial Comments at 3; Lori Wilde, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry (Oct. 24, 2023); IPO Initial Comments at 2; Authors Alliance, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 3 (Oct. 30, 2023) ("Authors Alliance Initial Comments").

commenters noted, prompts themselves, if sufficiently creative, may be copyrightable.[69] The copyright status of the output generated, however, is a separate question.[70]

Most commenters agreed that inputting simple prompts is insufficient to make a user the author of the AI-generated output.[71] Several described prompts as unprotectible ideas or instructions.[72] The American Society of Composers, Authors and Publishers ("ASCAP"), a performing rights organization, asserted that "[w]here a human's involvement is limited to the simple generation of minimal queries and prompts for an AI tool, the resulting material is not entitled to copyright protection."[73] The Brooklyn Law Incubator & Policy Clinic asserted that a simple, general prompt lacks "enough human creativity for the output to qualify for copyright protection."[74] Universal Music Group ("UMG") stated: "The prompting user is no more an

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[69] *See* AI Registration Guidance at 16192 n.27; The Authors Guild Initial Comments at 32 n.39 (arguing that the creator of a prompt "has a copyright in the prompt assuming it has sufficient original expression"); American Association of Independent Music ("A2IM") and the Recording Industry Association of America, Inc. ("RIAA"), Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 34 (Oct. 30, 2023) ("A2IM-RIAA Joint Initial Comments"); Daniel Gervais, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 6 (Oct. 30, 2023) ("Daniel Gervais Initial Comments").

[70] *See generally* A2IM-RIAA Joint Initial Comments at 34 ("While the text of those prompts may be independently copyrightable if sufficiently expressive, that does not confer upon the author of the prompt any copyright in the output generated by the AI system."); Johan Brandstedt, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 29 (Oct. 29, 2023) ("Johan Brandstedt Initial Comments").

[71] Commenters used "simple" with varying degrees of specificity, generally referring to prompts that contain only generic descriptions or a short number of words. *See, e.g.*, Donaldson Callif Perez, LLP, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 2 (Oct. 30, 2023) ("Donaldson Callif Perez Initial Comments") ("[W]e agree that simple prompts by humans that result in a complex, creative work should not be granted copyright protection."); Dina LaPolt Initial Comments at 7 (stating that "a user inputting a simple generic prompt" should not be able to claim copyright protection); Edward Lee, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 11 (Oct. 30, 2023) (stating that "a simple one- or two-word prompt" is unlikely to satisfy the minimum standard for copyright protection in the output); Peer Music and Boomy, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 11 (Oct. 30, 2023) ("Peer Music-Boomy Joint Initial Comments") (finding it difficult to imagine how a single prompt that produces a complex output could provide a basis for claiming copyright protection in the output).

[72] *See, e.g.*, Adobe Inc., Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 5–6 (Oct. 30, 2023) ("Adobe Initial Comments") ("[A] prompt is not copyrightable because the prompt represents the idea."); Johan Brandstedt Initial Comments at 19 (stating that "prompts express *ideas*, image and text generators provide stored *expression*"); European Writers' Council ("EWC"), Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 16 (Oct. 30, 2023) ("EWC Initial Comments") (stating that "the person formulating the prompts [cannot] claim any rights with respect to the results on the basis of the prompts alone, because the mere formulation of the task and the choice between several results proposed by the AI system is not a creative or protectable act").

[73] ASCAP, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 48–49 (Oct. 30, 2023) ("ASCAP Initial Comments").

[74] Brooklyn Law Incubator & Policy Clinic ("BLIP"), Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 20 (Oct. 30, 2023) ("BLIP Initial Comments"); *see also* Qualcomm Incorporated, Reply Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 7 (Dec. 6, 2023) ("Qualcomm Reply Comments") (stating that output "based on a single, general prompt with *de minimis* creativity" lacks "requisite human expression").

author than someone who tells a musician friend to 'write me a pretty love song in a major key' and then falsely claims co-ownership."[75]

By contrast, other commenters disputed the notion that prompts merely "influence" the AI system and do not provide "specific instructions to create a particular expressive result."[76] For example, the Intellectual Property Owners Association stated that "[i]f a user prompts Midjourney to produce an image or series of images of a city scape under water, the user is going to get a city scape under water."[77]

Commenters' views on more detailed prompts, including those that are revised and repeated, varied. Some viewed highly detailed prompts as sufficient to make some AI-generated outputs copyrightable.[78] Professors Pamela Samuelson, Christopher Jon Sprigman, and Matthew Sag stated that "[s]ophisticated prompts that specify details of an image should be sufficient to meet the [human authorship] requirement," and that "[a] person who instructs a Generative AI with enough detail, such that model output reflects that person's original

[75] Letter from UMG, Summary of *Ex Parte* Meeting on Apr. 22, 2024, Regarding the Office's AI Study, to U.S. Copyright Office 11 (Dec. 3, 2024) (arguing that "users prompting [music generative AI companies] to generate audio files are not composing or writing anything, much less 'their own, original music'" and instead are "simply supply[ing] an uncopyrightable idea in a text prompt . . . and the software itself generates an audio track based on its own predictive algorithms").

[76] IPO Initial Comments at 5; Van Lindberg, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 41 (Oct. 30, 2023) ("Van Lindberg Initial Comments") ("Randomness is part of the generative process—but *the output of an AI model is not random*. A human using the AI system typically describes what should be generated and/or provides other inputs that are used to initialize and guide the generative process."); Ashley Greenwald, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 11 (Oct. 30, 2023) (arguing that interior designers initiate generative AI systems by "giv[ing] certain prompts and instructions," refining and modifying interim results, and "mak[ing] the *final determination* whether and how the output co-created with the help of generative AI tools should be utilized"); Christa Laser, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 5 (Oct. 30, 2023) ("Christa Laser Initial Comments") ("A few uses of generative AI employ random strings and undirected outcomes, but a more significant role of generative AI is to implement a human's extensive creativity, direction, and selection towards an outcome pre-dreamed in the human mind.").

[77] IPO Initial Comments at 5.

[78] *See* BLIP Initial Comments at 23 (stating that users "may provide very detailed and extensive prompts to an AI-system to ensure that its output is as close as possible to what they anticipated" and such outputs should be copyrightable if "they provided sufficient input and prompts to control the output of an AI system"); Van Lindberg Initial Comments at 42 (stating that "the more information that is given within the prompt, the more control is exerted over the output"); Law Office of Seth Polansky LLC, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 26 (Oct. 12, 2023) ("Seth Polansky Initial Comments") ("[A] human who closely guides the output of a generative AI system through curated training or by providing detailed prompts may be able to claim some form of 'joint authorship' with the machine."); Donaldson Callif Perez Initial Comments at 2 ("[I]f someone spends a significant amount of effort creating very specific and detailed prompts to create a complex work, perhaps there should be some copyright protection for that work.").

conception of the work, should be regarded as the author of the resulting work."[79] Another commenter asserted that, with detailed prompts, users "can achieve remarkable control over the expressive elements of the work, such as lighting, pose, style, expressions, and setting."[80]

In contrast, the Authors Guild argued that the unpredictability of the prompt-to-output generation process may make it "difficult to show that there was sufficient control and consequently a sufficient closeness between 'conception and execution.'"[81] Others agreed.[82] Adobe, for instance, stated that "[w]hen you submit a prompt (or idea), you then receive an output based solely on the AI's interpretation of that prompt," and the "AI's expression of [that] idea is not copyrightable."[83]

Several commenters described AI systems as black boxes,[84] meaning that not only do users in most cases not know what "will inform the [AI's] response" to prompts,[85] but that even developers of AI systems cannot generally predict outputs or explain why they include certain

[79] Pamela Samuelson et al., Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 3 (Oct. 30, 2023) ("Pamela Samuelson et al. Initial Comments"); *see also* MPA Initial Comments at 47 (predicting that prompts could become "much more detailed" as technology improves to the point where "the inputs themselves may provide the substantive content for the output" and concluding that "[a] rule that prompts would never satisfy the human authorship requirement neglects those likely possibilities").

[80] Christa Laser Initial Comments at 5. Several other commenters cautioned that while there may "be cases where the prompts are so directive and detailed" that the user could be entitled to copyright protection for the output, this is likely to be rare. The Authors Guild Initial Comments at 32; *see also* Daniel Gervais Initial Comments at 6 (describing as "exceptional" cases "in which a detailed prompt . . . could contain expressions of specific ideas that reflect human creative choices directly perceptible in the machine's output").

[81] The Authors Guild Initial Comments at 31.

[82] *See* Association of Medical Illustrators, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 8–9 (Oct. 30, 2023); Kernochan Center Initial Comments at 5–6.

[83] Adobe Initial Comments at 5–6; *see also* Johan Brandstedt Initial Comments at 14, 29; EWC Initial Comments at 16.

[84] *See, e.g.*, Professional Photographers of America, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 7 (Oct. 30, 2023); SeaQVN, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 63 (Sept. 13, 2023); IAC Inc. and Dotdash Media Inc., d/b/a Dotdash Meredith, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 3 (Oct. 30, 2023); Eric Bourdages, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 1 (Nov. 26, 2023); James Horvath, Reply Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 1 (Sep. 13, 2023); Cooper Reid, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry (Aug. 31, 2023).

[85] Kernochan Center Initial Comments at 5; *see also* Gabriel Moise, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry (Aug. 31, 2023); The Authors Guild Initial Comments at 31–32; Vikas Hassija et al., *Interpreting Black-Box Models: A Review on Explainable Artificial Intelligence*, 16 COGNITIVE COMPUTATION 45, 47 (2024), https://link.springer.com/article/10.1007/s12559-023-10179-8 (noting that "the internal workings of [a black-box] model are not easily accessible or interpretable" and that this "lack of transparency" makes it difficult "to understand the model's behavior").

elements and not others.[86] Some provided examples of prompts containing detailed descriptions of what the user had in mind, where the output omitted some elements requested and inserted others.[87]

Commenters also noted that prompts are often entered into an AI system in one medium (such as text) and the output is generated in a different medium (such as a visual image, video, or audio clip). Several commenters asserted that moving from one medium to another requires interpretation, and where AI provides that interpretation, the user's control over the execution of their idea is indirect.[88] UMG highlighted one popular text-to-music generator that cautions users, "[n]o matter how detailed[,] text prompts cannot fully define an actual piece of music."[89]

Some stressed that generative AI systems can produce a seemingly limitless number of variations in response to the same prompt, no matter how many times that prompt is used.[90] The Kernochan Center argued that "[e]xtending the scope of copyright protection in the written prompts to cover the multiplicity of potential outputs" that may be generated by an AI system "comes uncomfortably close to conferring a copyright in a method of generating images (or other works)," which would be prohibited under section 102(b).[91]

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[86] *See* EWC Initial Comments at 9 ("In computer science, PROCESSING (computation) is consistently described as a black box; not even the operators of AI systems know exactly what happens during the learning process—and they do not control it."); *see also supra* Section II.A.

[87] *See* Kernochan Center Initial Comments at 8–9 & n.13 (noting that "even highly elaborated prompts will . . . yield multiple outputs (not all of them fully or accurately responsive to the prompts)" and providing examples). *See also* Tonio Inverness, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 5 (Sept. 12, 2023) (demonstrating labor that goes into refining prompts after the results of initial prompt were "not at all what [commenter] had in mind"); UMG Initial Comments at 76–77.

[88] Johan Brandstedt Initial Comments at 14, 19 (stating that "anything started in writing ought not to merit copyright claims over an image"); Kernochan Center Initial Comments at 8 (stating that a textual description "would need to evince an extremely high degree of precision" in order to claim copyright in a pictorial work produced through the use of those instructions); The Authors Guild Initial Comments at 31 n.36 (stating that converting a "text instruction to images created from training data makes the output unpredictable").

[89] Letter from UMG, Summary of *Ex Parte* Meeting on Apr. 22, 2024 Regarding the Office's AI Study, to U.S. Copyright Office 3 (Dec. 3, 2024) (internal citation omitted); *see also How do I make music with Udio?*, UDIO, https://www.udio.com/guide (last visited Jan. 17, 2025) (explaining that prompts cannot fully define an output because "the same text describes an infinite number of possible audio tracks").

[90] *See, e.g.*, Kernochan Center Initial Comments at 8–9; The Authors Guild Initial Comments at 32 n.39.

[91] Kernochan Center Initial Comments at 8–9; *see also* 17 U.S.C. § 102(b) (excluding from copyright protection "any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work").

A few commenters asserted that human-directed revisions to prompts may result in greater control over an output's expressive elements.[92] One technique entails submitting a prompt to the AI system, then revising the prompt, either by adding, removing, or replacing certain terms based on the initial output produced, to generate a new output. The user may revise and repeat upwards of hundreds of times.[93] Eventually the system may generate an output that meets the user's needs; if not, the user may decide to revise the prompt again or abandon the effort. Commenters noted that this process can require a significant amount of time and "demonstrable human effort."[94]

Some commenters advanced a theory of "authorship by adoption" (though few used that phrase).[95] They suggested that a user may exercise creative judgment when deciding to accept the output produced by a generative AI system. One suggested that a user who "repeatedly enters prompts until the output matches their desired expression" is no different than an "artist who continues to dab paint on the canvas until the image matches the painter's vision."[96] In contrast, the Authors Guild likened repetitive prompting to "spinning a roulette

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[92] *See, e.g.*, Evangelical Christian Publishers Association ("ECPA"), Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 8 (Oct. 30, 2023) ("ECPA Initial Comments") ("If the issue is one of control and predictability, fine-tuning repeatedly until the final expression is satisfactory demonstrates the author's ultimate control of the final work, even if each iteration leading up to the final expression may be subject to unpredictability."); SCA Robotics, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 2 (Sept. 29, 2023) ("SCA Robotics Initial Comments") (stating that authorship should depend on factors such as "the human user's control of the artistic expression outputted by the platform," including "the extent of the human party's discretion over accepting and/or modifying the outputted work"); International Center for Law & Economics, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 18 (Oct. 30, 2023) ("AI systems remain tools that require human direction and judgment. As such, when a person provides the initial prompt or framing, makes choices regarding the iterative development of the AI output, and decides that the result is satisfactory for inclusion in a final work, they are fundamentally engaging in creative decision making that constitutes authorship under copyright law.").

[93] *See* IPO Initial Comments at 5 (noting that "[t]he same user might iterate on dozens, even hundreds, of prompts of greater complexity and specificity before achieving a desired result").

[94] Superframe, LLC, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry (Sept. 6, 2023); *see also* AI and Metaverse Task Force of the Trust over IP Foundation, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 4 (Oct. 30, 2023); Donaldson Callif Perez Initial Comments at 2.

[95] This theory would find authorship in the decision to adopt something unplanned or unexpected occurring in the course of creating a work. *See* Jane C. Ginsburg & Luke Ali Budiardjo, *Authors and Machines*, 34 BERKELEY TECH. L.J. 343 (2019). It can be traced to *Alfred Bell & Co. v. Catalda Fine Arts*, which assessed the originality of mezzotint engravings that were based on paintings in the public domain. 191 F.2d 99, 104 (2d Cir. 1951). The defendant argued that the engravings were mere copies of preexisting paintings, and therefore not protected by copyright. *Id.* In finding that the engraver's versions were sufficiently different, the court speculated that "[a] copyist's bad eyesight or defective musculature, or a shock caused by a clap of thunder, may yield sufficiently distinguishable variations." *Id.* at 105. "Having hit upon such a variation unintentionally," the court held that "the 'author' may adopt it as his and copyright it." *Id.*

[96] ECPA Initial Comments at 7.

wheel with infinite possibilities."[97] It argued that "when a user [metaphorically] spins the wheel dozens of times until they land on an output they like," such activity should not give the user a right to claim ownership of that output.[98]

Discussing the authorship by adoption theory, Professors Jane Ginsburg and Luke Ali Budiardjo concluded that, "[w]ere post-execution adoption to substitute for any authorial participation, even indirect or inadvertent, in giving physical form to a work, then, in addition to [naming] the 'wrong' author, copyright law would effectively vest adopters with rights in ideas."[99] Professor Daniel Gervais made a similar point with the following analogy: "If I walk into a gallery or shop that specializes in African savanna paintings or pictures because I am looking for a specific idea (say, an elephant at sunset, with trees in the distance), I may find a painting or picture that fits my idea," but "[t]hat in no way makes me an author."[100]

2. Analysis

The Office concludes that, given current generally available technology, prompts alone do not provide sufficient human control to make users of an AI system the authors of the output. Prompts essentially function as instructions that convey unprotectible ideas. While highly detailed prompts could contain the user's desired expressive elements, at present they do not control how the AI system processes them in generating the output.

Cases regarding joint authorship support this conclusion. These cases address the amount of control that is necessary to claim authorship. The provision of detailed directions, without influence over how those directions are executed, is insufficient.[101] As the Third Circuit explained, when a person hires someone to execute their expression, "that process must be rote or mechanical transcription that does not require intellectual modification or highly technical enhancement" for the delegating party to claim copyright authorship in the final work.[102] Although entering prompts into a generative AI system can be seen as similar to providing instructions to an artist commissioned to create a work, there are key differences. In a human-to-human collaboration, the hiring party is able to oversee, direct, and understand the contributions of a commissioned human artist. Depending on the nature of each party's contributions, the artist may be the sole author, or the outcome may be a joint work or work

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[97] The Authors Guild Initial Comments at 31–32.

[98] *Id.*; *see also* Kernochan Center Initial Comments at 9 (asserting that "selection of a single output is not itself a creative act"); Daniel Gervais Initial Comments at 6–7; Johan Brandstedt Initial Comments at 29.

[99] Ginsburg & Budiardjo, *supra* note 95, at 370.

[100] Daniel Gervais Initial Comments at 7.

[101] *Payday*, 886 F.2d at 1087; *see, e.g.*, *CCNV*, 490 U.S. at 737 ("As a general rule, the author is the party who actually creates the work, that is, the person who translates an idea into a fixed, tangible expression entitled to copyright protection.").

[102] *Andrien*, 927 F.2d at 134–35.

made for hire.[103] In theory, AI systems could someday allow users to exert so much control over how their expression is reflected in an output that the system's contribution would become rote or mechanical.[104] The evidence as to the operation of today's AI systems indicates that this is not currently the case. Prompts do not appear to adequately determine the expressive elements produced, or control how the system translates them into an output.[105]

The gaps between prompts and resulting outputs demonstrate that the user lacks control over the conversion of their ideas into fixed expression, and the system is largely responsible for determining the expressive elements in the output. In other words, prompts may reflect a user's mental conception or idea, but they do not control the way that idea is expressed. This is even clearer in the case of generative AI systems that modify or rewrite prompts internally. That process recasts the human contribution—however detailed it may be—into a different form.

The following image, which the Office generated by entering a prompt into a popular commercially available AI system, illustrates this point:[106]

Prompt	***Output***
professional photo, bespectacled cat in a robe reading the Sunday newspaper and smoking a pipe, foggy, wet, stormy, 70mm, cinematic, highly detailed wood, cinematic lighting, intricate, sharp focus, medium shot, (centered image composition), (professionally color graded), ((bright soft diffused light)), volumetric fog, hdr 4k, 8k, realistic	

This prompt describes the subject matter of the desired output, the setting for the scene, the style of the image, and placement of the main subject. The resulting image reflects some of these instructions (*e.g.*, a bespectacled cat smoking a pipe), but not others (*e.g.*, a highly detailed wood environment). Where no instructions were provided, the AI system filled in the gaps.

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[103] In contrast, AI systems cannot produce joint works or works made for hire because they are not "authors," they are not capable of forming an intention to merge their output with the user's contributions, and they cannot enter into binding contracts. *See* Kernochan Center Initial Comments at 7; Brief for Appellees, at 27, Thaler v. Perlmutter, No. 23-5233 (D.C. Cir. Mar. 6, 2024).

[104] This outcome would raise additional questions about the utility of AI in creative expression.

[105] *Cf. Geshwind*, 734 F. Supp. at 650–51 ("The fact that the agent, Geshwind, wanted changes in details and aspects of the portrait and even made suggestions, the compliance with which may or may not have improved the effect, does not make him the creator."); *M.G.B. Homes*, 903 F.2d at 1493; *Payday*, 886 F.2d at 1087.

[106] The Office used Google's generative AI chatbot Gemini to generate this image. GEMINI, https://gemini.google.com/ (last visited Jan. 17, 2025).

For instance, the prompt does not specify the cat's breed or coloring, size, pose, any attributes of its facial features or expression, or what clothes, if any, it should wear beneath the robe. Nothing in the prompt indicates that the newspaper should be held by an incongruous human hand.

The fact that identical prompts can generate multiple different outputs further indicates a lack of human control.[107] As one popular system explains on its website, "[n]o matter how detailed . . . the same text describes an infinite number of possible" outputs.[108] In these circumstances, the black box of the AI system is providing varying interpretations of the user's directions.

Repeatedly revising prompts does not change this analysis or provide a sufficient basis for claiming copyright in the output. First, the time, expense, or effort involved in creating a work by revising prompts is irrelevant, as copyright protects original authorship, not hard work or "sweat of the brow."[109] Second, inputting a revised prompt does not appear to be materially different in operation from inputting a single prompt. By revising and submitting prompts multiple times, the user is "re-rolling" the dice, causing the system to generate more outputs from which to select, but not altering the degree of control over the process.[110] No matter how many times a prompt is revised and resubmitted, the final output reflects the user's acceptance of the AI system's interpretation, rather than authorship of the expression it contains.

Some commenters drew analogies to a Jackson Pollock painting or to nature photography taken with a stationary camera, which may be eligible for copyright protection even if the author does not control where paint may hit the canvas or when a wild animal may step into the frame.[111] However, these works differ from AI-generated materials in that the human author is principally responsible for the execution of the idea and the determination of the expressive elements in the resulting work. Jackson Pollock's process of creation did not end with his vision of a work. He controlled the choice of colors, number of layers, depth of texture, placement of each addition to the overall composition—and used his own body movements to execute each of these choices. In the case of a nature photograph, any copyright protection is based primarily on the angle, location, speed, and exposure chosen by the photographer in

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[107] *See supra* note 32. The Office re-ran the prompt above and received a much different image of a cat in a stormy setting.

[108] *How do I make music with Udio?*, UDIO, https://www.udio.com/guide (emphasis omitted) (last visited Jan. 17, 2025).

[109] *Feist*, 499 U.S. at 352.

[110] *See, e.g.*, Kernochan Center Initial Comments at 8 ("If each prompt newly rolls the dice, it is difficult to discern the dominance of will that 'direction' implies, and thus hard to classify it as meeting the requirement of an objective 'intent.'").

[111] *See, e.g.*, Tim Boucher, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 8 (Oct. 26, 2023); Christa Laser Initial Comments at 4; MPA Initial Comments at 47–50; Pamela Samuelson et al. Initial Comments at 4.

setting up the camera, and possibly post-production editing of the footage.[112] As one commenter explained, "some element of randomness does not eliminate authorship," but "the putative author must be able to constrain or channel the program's processing of the source material."[113] The issue is the degree of human control, rather than the predictability of the outcome.[114]

The Office also agrees that authorship by adoption does not in itself provide a basis for claiming copyright in AI-generated outputs. As commenters noted, providing instructions to a machine and selecting an output does not equate to authorship.[115] Selecting an AI-generated output among uncontrolled options is more analogous to curating a "living garden," than applying splattered paint.[116] As the Kernochan Center observed, "selection among the offered options" produced by such a system cannot be considered copyrightable authorship, because the "selection of a single output is not itself a creative act."[117]

There may come a time when prompts can sufficiently control expressive elements in AI-generated outputs to reflect human authorship. If further advances in technology provide users with increased control over those expressive elements, a different conclusion may be called for.[118] On the other hand, technological advancements that facilitate increased automation and optimization may bolster our current conclusions. For example, if generative

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[112] Like other copyrighted works, nature photography must have a sufficient amount of creative expression to satisfy the originality standard.

[113] Kernochan Center Initial Comments at 5.

[114] *See* Digital Media Licensing Association ("DMLA"), Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 16 (Oct. 30, 2023) ("DMLA Initial Comments") (stating that "the foreseeability of the AI's results may bear on authorship" in cases "where there is a limited range of specific expressive output that is objectively foreseeable as a result of a human user's prompt"); Kernochan Center Initial Comments at 5; MPA Initial Comments at 45–46 (acknowledging that evaluating "the elements of predictability and control may be appropriate in certain cases"); International Trademark Association ("INTA"), Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 5 (Oct. 30, 2023) ("INTA Initial Comments") (acknowledging that if a program generated an image by simply populating "each pixel with a randomly-selected color, it seems obvious that the resulting work should not be considered a work of authorship"); The Authors Guild Initial Comments at 31.

[115] The Authors Guild Initial Comments at 31–32; Daniel Gervais Initial Comments at 6–7; Kernochan Center Initial Comments at 8.

[116] *Kelley v. Chicago Park Dist.*, 635 F.3d 290, 304 (7th Cir. 2011); *see also* COMPENDIUM (THIRD) § 306; *Thaler*, 687 F. Supp. 3d at 146 (holding that the "key" to copyright protection is "[h]uman involvement in, and ultimate creative control over, the work at issue").

[117] Kernochan Center Initial Comments at 9.

[118] S*ee* Authors Alliance Initial Comments at 19 ("[A]s both generative AI systems and the ways that creators use them change and evolve, the application of the human authorship requirement to content that is AI-generated or AI-assisted may also change. For example, if these tools developed in a way that would give creators more control over the outputs, works created with these tools could potentially be considered works of human authorship.").

AI systems integrate or further improve automated prompt optimization, users' control may be diminished.

E. Expressive Inputs

As discussed above, AI systems take inputs in the form of text, images, audio, video, or a combination of these mediums. Some systems—whether via tools, settings, or prompts—allow inputs to be substantially retained as part of the output. For example, one commenter noted that a human author may create an original illustration, input that work into an AI system, and instruct the system "to modify [the] color or layer portions of [the] existing image."[119] Another observed that an AI system may be used to modify or translate a copyrighted work,[120] such as uploading a story written in the first person and instructing the system to convert it to a third-person point of view.

These types of expressive inputs, while they may be seen as a form of prompts, are different from those that merely communicate desired outcomes. As commenters pointed out, where human-authored inputs are reflected in the output, they contribute more than just an intellectual conception. One explained that "a human author who inputs their own illustration or media file" into an AI system "may have a greater claim to authorship," because "there is a limited range of specific expressive output that is objectively foreseeable as a result of a human user's" contribution.[121] Another noted that when a user provides an input to an AI system such as "a traditional work created or designated by the user . . . the specified starting point constrains the 'autonomy' of the outputs" and thus may "present a more persuasive case of human intervention" than simply applying "prompts to an unknown starting point."[122]

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[119] DMLA Initial Comments at 16.

[120] Pearson, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 7 (Oct. 30, 2023) ("Pearson Initial Comments").

[121] DMLA Initial Comments at 16; *see* Pearson Initial Comments at 7–8 (acknowledging that "copyright can only protect material that is the product of human activity" and stating that "further consideration should be given to whether a claim of authorship in output may exist where the input itself is a representation of the original intellectual conception of an author"); National Music Publishers' Association ("NMPA"), Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 30 (Oct. 30, 2023) ("NMPA Initial Comments") ("Creators that use AI to refine, recast, or modify, or to create new derivative works based on their preexisting works may also have legitimate claims of authorship over the resulting work in some circumstances.").

[122] Kernochan Center Initial Comments at 5–6; *see* MPA Initial Comments at 50 (noting that "material human creators provide to the AI tool" such as "inputs, like a drawing or photo" can be considered "intellectual and creative contributions that are inseparable from the ultimate work").

As an example, in the following work submitted to the Office for registration, the author had created a hand-drawn illustration and used it as an input, along with the prompt shown below.[123]

The AI system produced this output:

Prompt	***Input***	***Output***
"a young cyborg woman (((roses))) flowers coming out of her head, photorealism, cinematic lighting, hyper realism, 8k, hyper detailed."		

The drawing itself is a copyrightable work, and its expressive elements are clearly perceptible in the output, including the outline of the mask, the position of the nose, mouth, and cheekbones relative to the shape of the mask, the arrangement of the stems and rosebuds, and the shape and placement of the four leaves.

The applicant disclaimed "any non-human expression" appearing in the final work, such as the realistic, three-dimensional representation of the nose, lips, and rosebuds, as well as the lighting and shadows in the background. After reviewing the information provided in the application, the Office registered the work with an annotation stating: "Registration limited to unaltered human pictorial authorship that is clearly perceptible in the deposit and separable from the non-human expression that is excluded from the claim."[124]

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[123] *Rose Enigma*, VAu001528922 (Mar. 21, 2023). More about the artist Kris Kashtanova's creation of this work is available on their website. *Portfolio: Rose Enigma*, KRIS KASHTANOVA, https://www.kris.art/portfolio-2/rose-enigma (last visited Jan. 17, 2025).

[124] *Rose Enigma*, VAu001528922 (Mar. 21, 2023). By contrast, the Office's Review Board upheld a refusal to register an image produced by an AI system with a human author's photograph as an input. U.S. Copyright Office Review Board, *Decision Affirming Refusal of Registration of Suryast* at 1 (Dec. 11, 2023), https://copyright.gov/rulings-filings/review-board/docs/SURYAST.pdf. The applicant disclosed that the image was generated by "RAGHAV Artificial Intelligence Painting App" ("RAGHAV"), which had been trained on Vincent van Gogh's *The Starry Night*—with an instruction to apply the style of *The Starry Night* to the photograph. *Id*. at 2. The Board found that the resulting image did not "contain sufficient human authorship necessary to sustain a claim to copyright" because the applicant "exerted insufficient creative control over RAGHAV's" generation of the output. *Id*. at 3, 7–8. Unlike *Rose Enigma*, the output did not clearly show the copyrightable work input by the applicant. *See id*. at 7–8.

As illustrated in this example, where a human inputs their own copyrightable work and that work is perceptible in the output, they will be the author of at least that portion of the output. Their own creative expression will be protected by copyright, with a scope analogous to that in a derivative work. Just as derivative work protection is limited to the material added by the later author,[125] copyright in this type of AI-generated output would cover the perceptible human expression. It may also cover the selection, coordination, and arrangement of the human-authored and AI-generated material, even though it would not extend to the AI-generated elements standing alone.

F. Modifying or Arranging AI-Generated Content

Generating content with AI is often an initial or intermediate step, and human authorship may be added in the final product. As explained in the AI Registration Guidance, "a human may select or arrange AI-generated material in a sufficiently creative way that 'the resulting work as a whole constitutes an original work of authorship.'"[126] A human may also "modify material originally generated by AI technology to such a degree that the modifications meet the standard for copyright protection."[127]

As several commenters noted, human authors should be able to claim copyright if they select, coordinate, and arrange AI-generated material in a creative way.[128] This would provide protection for the output as a whole (although not the AI-generated material alone).[129] A relatively common scenario in registration applications is the combination of human-authored text with AI-generated images. In one early case, for instance, the Office found that the selection and arrangement of AI-generated images with human-authored text in a comic book were protectable as a compilation. We explained:

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[125] *See* H.R. REP. NO. 94-1476, at 57; S. REP. NO. 94-473, at 55 ("[C]opyright in a 'new version' covers only the material added by the later author, and has no effect one way or the other on the copyright or public domain status of the preexisting material.").

[126] AI Registration Guidance at 16192.

[127] *Id.* at 16192–93.

[128] *See, e.g.*, BLIP Initial Comments at 20; Center for Art Law, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 9 (Oct. 26, 2023); Cisco Systems, Inc., Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 7 (Oct. 30, 2023) ("Cisco Initial Comments"); IPO Initial Comments at 4–6; Peer Music-Boomy Joint Initial Comments at 12.

[129] *See Feist*, 499 U.S. at 348 (noting that copyright protection for a compilation "may extend only to those components of a work that are original to the author").

> [T]he Office finds that the compilation of these images and text throughout the Work contains sufficient creativity under *Feist* to be protected by copyright. Specifically, the Office finds the Work is the product of creative choices with respect to the selection of the images that make up the Work and the placement and arrangement of the images and text on each of the Work's pages. Copyright therefore protects [the applicant's] authorship of the overall selection, coordination, and arrangement of the text and visual elements that make up the Work.[130]

Multiple similar registrations have been made since then.[131]

A number of commenters also made the point that if a user edits, adapts, enhances, or modifies AI-generated output in a way that contributes new authorship, the output would be entitled to protection.[132] They argued that these modifications "should be assessed in the same way as . . . editorial or other changes to a pre-existing work."[133] Although such works would not technically qualify as "derivative works,"[134] derivative authorship provides a helpful analogy in identifying originality. Again, the copyright would extend to the material the human author contributed but would not extend to the underlying AI-generated content itself.[135]

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[130] U.S. Copyright Office, *Cancellation Decision re: Zarya of the Dawn (VAu001480196)* at 5 (Feb. 21, 2023), https://www.copyright.gov/docs/zarya-of-the-dawn.pdf.

[131] *See supra* notes 15, 123.

[132] *See, e.g.*, Apple Initial Comments at 1; ASCAP Initial Comments at 49; The Authors Guild Initial Comments at 32; BLIP Initial Comments at 25; Cisco Initial Comments at 7; Graphic Artists Guild, Inc., Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 19 (Oct. 30, 2023) ("Graphic Artists Guild Initial Comments"); OpenAI, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 15 (Oct. 30, 2023).

[133] Kernochan Center Initial Comments at 6.

[134] A derivative work is "a work based upon one or more preexisting works." 17 U.S.C. § 101 (defining "derivative work"). Because entirely AI-generated outputs do not contain the human authorship required to be a "work of authorship," the modified versions cannot qualify under this definition. *See* H.R. REP. NO. 94-1476, at 57; S. REP. NO. 94-473, at 55 (noting that "the 'pre-existing work' must come within the general subject matter of copyright set forth in section 102, regardless of whether it is or was ever copyrighted").

[135] *See* H.R. REP. NO. 94-1476, at 57; S. REP. NO. 94-473, at 55.

Many popular AI platforms offer tools that encourage users to select, edit, and adapt AI-generated content in an iterative fashion. Midjourney, for instance, offers what it calls "Vary Region and Remix Prompting," which allow users to select and regenerate regions of an image with a modified prompt. In the "Getting Started" section of its website, Midjourney provides the following images to demonstrate how these tools work.[136]

(1) Generate Candidate Images with Prompt: *meadow trail lithograph*

(2) Select and Upscale Image

(3) Use Freehand Editing Tool to Select Region

(4) Generate Candidate Images with Prompt*:* *meadow stream lithograph*

(5) Select and Upscale Image

The image was further modified by repeating the editing process:

Other generative AI systems also offer tools that similarly allow users to exert control over the selection, arrangement, and content of the final output.[137]

[136] *Vary Region + Remix*, MIDJOURNEY, https://docs.midjourney.com/docs/vary-region-remix (last visited Jan. 17, 2025). Text descriptions below each image were added by the Office.

[137] OpenAI's ChatGPT, for instance, has a feature called "canvas," which provides an interactive interface for users to "collaborate" with the model while writing a document or code. Users can edit AI-generated text; highlight regions for the model to focus on; use built-in tools to request in-line suggestions, length adjustments, and changes to the reading level; and write instructions that detail particular edits to be made. *See Introducing Canvas*, OPENAI (Oct. 3, 2024), https://openai.com/index/introducing-canvas/.

Unlike prompts alone, these tools can enable the user to control the selection and placement of individual creative elements. Whether such modifications rise to the minimum standard of originality required under *Feist* will depend on a case-by-case determination.[138] In those cases where they do, the output should be copyrightable.

Similarly, the inclusion of elements of AI-generated content in a larger human-authored work does not affect the copyrightability of the larger human-authored work as a whole.[139] For example, a film that includes AI-generated special effects or background artwork is copyrightable, even if the AI effects and artwork separately are not.

[138] The selection, coordination, and arrangement of only two or three elements is not generally sufficient for copyright protection. *See* COMPENDIUM (THIRD) § 312.2 ("[T]he Office generally will not register a compilation containing only two or three elements, because the selection is necessarily *de minimis*." (citing H.R. REP. NO. 94-1476, at 122 (stating that a work does not qualify as a collective work "where relatively few separate elements have been brought together," as in the case of "a composition consisting of words and music, a work published with illustrations or front matter, or three one-act plays"))).

[139] *Cf.* AI Registration Guidance at 16192–93.

III. INTERNATIONAL APPROACHES

Other countries are also analyzing whether copyright protection should extend to works containing AI-generated material. Those that have addressed this issue so far have agreed that copyright requires human authorship.

The Korean Copyright Commission and the Ministry of Culture, Sports and Tourism issued *A Guide on Generative AI and Copyright* in 2023, in which it explained that "only a natural person can become an author"[140] and that "copyright registration for an AI output is impossible if a human did not contribute creatively to the expressive form."[141] The Korean guidance noted that "if a human had performed *additional work* on the AI output, such as modifying, or making additions or deletions, only the part that had undergone such change is copyrightable."[142] It also stated that an author can register a work as a compilation if he or she selected and rearranged the AI output creatively.[143]

In Japan, the Copyright Subdivision of the Cultural Council published a summary of its guidelines in May 2024 titled *General Understanding on AI and Copyright in Japan*.[144] The guidelines explained that the copyrightability of AI-generated content will be determined on a case-by-case basis, depending on the following factors: (1) the amount and content of the instructions and input prompts by the AI user; (2) the number of generation attempts; (3) the selection by the AI user from multiple output materials; and (4) any subsequent human additions and corrections to the AI-generated work.[145]

In the People's Republic of China, the Beijing Internet Court evaluated arguments in a copyright infringement case involving an AI-generated work in 2023, starting with the premise that human authorship was required for copyright protection.[146] It found that an image created

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[140] Ministry of Culture, Sports and Tourism & Korea Copyright Comm'n, *A Guide on Generative AI and Copyright*, at 40 (2023), https://www.copyright.or.kr/eng/doc/etc_pdf/Guide_on_Generative_AI_and_Copyright.pdf.

[141] *Id.* at 41.

[142] *Id.*

[143] *Id.* It has been reported that a copyright registration was granted in December 2023 for an AI-generated film based on the "human editing of the AI[-]generated film and images." Edward Lee, *South Korea grants copyright to AI generated work, 'AI Suro's Wife' film as work edited by humans*, CHATGPT IS EATING THE WORLD (Jan. 8, 2024), https://chatgptiseatingtheworld.com/2024/01/08/south-korea-grants-copyright-to-ai-generated-work-ai-suros-wife-film-as-work-edited-by-humans/.

[144] Legal Subcommittee under the Copyright Subdivision of the Cultural Council, *General Understanding on AI and Copyright in Japan* (May 2024), https://www.bunka.go.jp/english/policy/copyright/pdf/94055801_01.pdf.

[145] *Id.* at 17.

[146] Li Mou Mou Su Liu Mou Mou Qin Hai Zuo Pin Shu Ming Quan, Xin Xi Wang Luo Chuan Bo Quan Jiu Fen An (李某某诉刘某某侵害作品署名权, 信息网络传播权纠纷案) [Li v. Liu, Dispute over Copyright Infringement of the Right of Attribution and Right of Information Network Distribution of Works], at 14 (Beijing Internet Ct. Nov. 27, 2023), https://english.bjinternetcourt.gov.cn/pdf/BeijingInternetCourtCivilJudgment112792023.pdf. Page numbers in this Report are based on the English translation released by the Beijing Internet Court online.

using Stable Diffusion was protected under China's copyright law,[147] and that the person who used AI to create the image was the author.[148] According to the court, the selection of over 150 prompts combined with subsequent adjustments and modifications demonstrated that the image was the result of the author's "intellectual achievements," reflecting his personalized expression.[149]

In the European Union, the majority of member states agreed, in response to a 2024 policy questionnaire on the relationship between generative AI and copyright, that current copyright principles adequately address the copyright eligibility of AI outputs and there is no need to provide new or additional protection.[150] Member states also shared the view that AI-generated content may be eligible for copyright "only if the *human input in* [*the*] *creative process was significant*."[151] This consensus extended to the understanding that purely AI-generated works cannot be protected by copyright, as only a natural person can be considered an author.[152] Based on similar reasoning, in 2024, a court in Czechia, also known as the Czech Republic, held that an AI tool cannot be the author of a copyrighted work.[153]

In the United Kingdom, a statute predating the development of generative AI technologies protects works "generated by computer in circumstances such that there is no human author of the work."[154] It designates the author as a "person by whom the arrangements

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[147] *Id.* at 10–14; *see also* Copyright Law of the People's Republic of China (promulgated by the Standing Comm. Nat'l Cong., Feb. 26th, 2010, effective Apr. 1, 2010), art. 3.

[148] *See supra* note 146 at 14–15. While the ruling is not precedential under Chinese judicial practice, it may inform policies and practices about the copyrightability of AI-generated art under Chinese law. *Id.* at 11–12. China has recently considered statutory clarifications for when a work generated by AI is protected under copyright. A preliminary draft of China's proposed AI law states that when a work generated using AI meets the conditions under the Copyright Law then it can be protected under that law "based on the extent of the user's contribution to the final presentation of the content." Zhong Hua Ren Min Gong He Guo Ren Gong Zhi Neng Fa (Xue Zhe Jian Yi Gao) (中华人民共和国人工智能法 (学者建议稿)) [Law of the People's Republic of China on Artificial Intelligence (Scholar's Draft Proposal)], art. 36, Official WeChat account of the Digi. Rule of Law Inst. at East China Univ. of Political Sci. and L., *translated by* Center for Sec. and Emerging Tech., https://cset.georgetown.edu/wp-content/uploads/t0592_china_ai_law_draft_EN.pdf.

[149] *See supra* note 146 at 11–12.

[150] Council of the European Union, *Policy questionnaire on the relationship between generative Artificial Intelligence and copyright and related rights – Revised Presidency summary of the Member States contributions*, at 16–18 (Dec. 20, 2024), https://data.consilium.europa.eu/doc/document/ST-16710-2024-REV-1/en/pdf.

[151] *Id.* at 16.

[152] *Id.* at 15.

[153] *See* Tomáš Ščerba & Jaroslav Fořt, *The first Czech case on generative AI*, TECH.'S LEGAL EDGE (Apr. 4, 2024), https://www.technologyslegaledge.com/2024/04/the-first-czech-case-on-generative-ai/; Alessandro Cerri, *Czech court finds that AI tool DALL-E cannot be the author of a copyright work*, THE IPKAT (Apr. 15, 2024), https://ipkitten.blogspot.com/2024/04/czech-court-finds-that-ai-tool-dall-e.html.

[154] Copyright, Designs and Patents Act 1988, c. X, I, §§ 178, 9(3) (UK), https://www.legislation.gov.uk/ukpga/1988/48/data.pdf. Protection lasts for fifty years from the date the work is made. *Id.*, c. I, § 12(7).

necessary for the creation of the work are undertaken."[155] In 2021, the United Kingdom Intellectual Property Office ("UKIPO") sought public comment on whether to change this law, in light of advancements in generative AI. Based on the lack of any case law applying this provision to AI,[156] the UKIPO concluded that "[i]t is unclear whether removing [protection for computer-generated works] would either promote or discourage innovation and the use of AI for the public good."[157] It elected to leave the law in place but did not rule out future changes.[158] Since then, the UK government has initiated a new consultation on copyright and AI, including questions about prompts, computer-generated works, and outputs of AI models.[159]

Several other former and current commonwealth countries, such as Hong Kong,[160] India,[161] and New Zealand,[162] have enacted similar provisions, but there too it is unclear whether or how they will apply to AI-generated works.

In Canada, a 2021 review of the Copyright Act acknowledged a lack of clarity concerning the authorship of an AI-generated work.[163] While the Standing Committee on Industry, Science and Technology, which led the review, recommended that legislation should

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[155] *Id.*, c. I, § 9(3).

[156] UKIPO, *Consultation outcome of the Intell. Prop. Office on Artificial Intelligence and Intellectual Property: copyright and patents*, ¶ 22 (June 28, 2022), https://www.gov.uk/government/consultations/artificial-intelligence-and-ip-copyright-and-patents/outcome/artificial-intelligence-and-intellectual-property-copyright-and-patents-government-response-to-consultation#copyright-in-computer-generated-works.

[157] *Id.* ¶ 29.

[158] *Id.* ¶¶ 29–30.

[159] *See* UKIPO, *Open Consultation of the Intell. Prop. Office on Copyright and Artificial Intelligence* (Dec. 17, 2024), https://www.gov.uk/government/consultations/copyright-and-artificial-intelligence/copyright-and-artificial-intelligence#bcopyright-and-artificial-intelligence.

[160] Section 11(3) of Hong Kong's Copyright Ordinance states: "In the case of a literary, dramatic, musical or artistic work which is computer-generated, the author is taken to be the person by whom the arrangements necessary for the creation of the work are undertaken." Copyright Ordinance, (2019) Cap. 528, § 11(3) (H.K.).

[161] Section 2(d)(vi) of India's Copyright Act defines author as "in relation to any literary, dramatic, musical or artistic work which is computer-generated, the person who causes the work to be created." The Copyright Act, 1957, § 2(d)(vi). Without citing that section, in 2020 the Indian Copyright Office registered the AI-generated work described in note 124, listing the AI tool as a co-author, but a year later issued a notice of withdrawal of the registration. Sukanya Sarkar, *Exclusive: Indian Copyright Office issues withdrawal notice to AI co-author*, MANAGINGIP (Dec. 13, 2021), https://www.managingip.com/article/2a5d0jj2zjo7fajsjwwlc/exclusive-indian-copyright-office-issues-withdrawal-notice-to-ai-co-author.

[162] Section 5(2)(a) of New Zealand's copyright law defines author as "in the case of a literary, dramatic, musical, or artistic work that is computer-generated, the person by whom the arrangements necessary for the creation of the work are undertaken." Copyright Act 1994, s 5(2)(a).

[163] Innovation, Sci. and Econ. Dev. Canada ("ISED Canada"), *A Consultation on a Modern Copyright Framework for Artificial Intelligence and the Internet of Things*, at 12 (2021), https://ised-isde.canada.ca/site/strategic-policy-sector/sites/default/files/attachments/2022/ConsultationPaperAIEN.pdf.

provide greater clarity, the Canadian Parliament has not yet acted on the recommendation.[164] In 2023, Canada relaunched the consultation process, with a comment period that closed in January 2024.[165]

Similarly, in Australia, participants in 2024 consultations held by the Select Committee on Adopting Artificial Intelligence shared concerns over the lack of clarity in Australia's copyright laws regarding the "extent of copyright protection, if any, that is afforded to works created by humans with the assistance or augmentation of AI."[166] The Select Committee in its recommendations, however, did not specifically address this issue or suggest any action.

Although some level of consensus on the need for human authorship appears to be emerging, and most countries have so far continued to apply existing law, it is clear that views are still being formed. It remains to be seen how copyrightability standards will be interpreted and applied. The Office is closely monitoring developments abroad and evaluating how other countries' evolving approaches may ultimately overlap or differ from our own.

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[164] *Id.* at 13.

[165] ISED Canada, *Consultation on Copyright in the Age of Generative Artificial Intelligence* (2021), https://ised-isde.canada.ca/site/strategic-policy-sector/en/marketplace-framework-policy/consultation-copyright-age-generative-artificial-intelligence.

[166] Select Committee on Adopting Artificial Intelligence, Parliament of Australia (Final Report, November 2024) ¶ 4.166, https://parlinfo.aph.gov.au/parlInfo/download/committees/reportsen/RB000470/toc_pdf/SelectCommitteeonAdoptingArtificialIntelligence(AI).pdf.

IV. THE ARGUMENTS FOR LEGAL CHANGE

A. Providing Incentives

Commenters generally stressed the value of incentives to produce new works of authorship.[167] They differed, however, in their interpretations of the Copyright Clause and their assessment of the impact of providing such incentives for AI-generated content.

Those supporting copyright protection for AI-generated material contended that it would encourage the creation of more works, furthering progress in culture and knowledge to the benefit of the public.[168] They took the position that the Copyright Clause should be read flexibly to encompass new technologies.[169] For instance, one commenter argued that this interpretation should "evolve with technological advancements" to ensure that "the spirit of this mandate continues to foster innovation and artistic expression in all its forms."[170]

Most commenters that opined on this issue, however, agreed with the Office's view that the Copyright Clause requires human authorship.[171] They supported the conclusion that AI-

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[167] *See, e.g.*, A2IM-RIAA Joint Initial Comments at 4 n.11 (quoting *Thaler v. Perlmutter*, No. 22-cv-1564, 2023 WL 5333236, at *4 (D.D.C. Aug. 18, 2023)); Copyright Alliance, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 5 (Oct. 30, 2023) ("Copyright Alliance Initial Comments"); DMLA Initial Comments at 17–18; Graphic Artists Guild Initial Comments at 1; Internet Archive, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 10–11 (Oct. 30, 2023) ("Internet Archive Initial Comments").

[168] *See, e.g.*, Dallas Joder, Reply Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 3 (Nov. 30, 2023) ("Dallas Joder Reply Comments"); Peer Music-Boomy Joint Initial Comments at 14.

[169] For example, AI company BigBear.ai asserted that the Constitution "does not prohibit protection of AI-generated material," and that the availability of copyright protection "should not depend on the method through which [it] was generated." BigBear.ai Holdings, Inc., Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 25 (Oct. 18, 2023); *see also* Ryan Abbott, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 6 (Oct. 21, 2023) ("Ryan Abbott Initial Comments") ("The history and purpose of the Constitution and the Copyright Act both weigh in favor of the protection of AI-generated works because the public interest trumps any direct benefit to authors."); Peer Music-Boomy Joint Initial Comments at 15 ("[W]e do not believe that placing limitations on creators by limiting the sort of output we incentivize furthers the constitutional aims of copyright."); BLIP Initial Comments at 25 ("The Copyright Act should be amended to include a new section that provides protection for AI-generated material.").

[170] Dallas Joder Reply Comments at 3; *see also* Duane Valz, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 3 (Oct. 18, 2023) (While "the authors of the Constitution may not have imagined that entities other than natural persons would ever qualify as authors or inventors. . . .[, t]his doesn't mean that new types or persons or entities cannot be made eligible as authors or owners of copyrights if Congress sees fit to deem them such.").

[171] *See* A2IM-RIAA Joint Initial Comments at 34–35; The Authors Guild Initial Comments at 34; Anonymous AI Technical Writer, Reply Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 15 (Dec. 6, 2023) ("Anonymous AI Technical Writer Reply Comments"); Copyright Alliance Initial Comments at 96–97; DMLA Initial Comments at 17–18; Graphic Artists Guild Initial Comments at 20; David Newhoff, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 3 (Oct. 17, 2023) ("David Newhoff Initial Comments"); UMG Initial Comments at 81–82.

generated material can only be protected where there is sufficient human involvement or where AI is used as a tool to enhance human expression.[172]

These commenters emphasized that the Copyright Clause refers to promoting progress specifically by providing *authors* with legal and economic incentives.[173] They noted that AI systems, by contrast, are inanimate objects that "do not need an incentive to create."[174] As one commenter stated, "AIs do the work they are programmed to do, without regard to incentives."[175]

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[172] *See* American Bar Association, Intellectual Property Law Section ("ABA-IPL"), Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 14 (Oct. 30, 2023) ("ABA-IPL Initial Comments"); American Intellectual Property Law Association ("AIPLA"), Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 11 (Oct. 30, 2023) ("AIPLA Initial Comments"); Johan Brandstedt Initial Comments at 30; ACT | The App Association ("App Association"), Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 6–7 (Oct. 30, 2023) ("App Association Initial Comments"); Entertainment Software Association, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 7 (Oct. 30, 2023); IPO Initial Comments at 7; Recording Academy Initial Comments at 11; Scenario Initial Comments at 16–17.

[173] *See* A2IM-RIAA Joint Initial Comments at 4 (quoting *Thaler v. Perlmutter*, No. 22-cv-1564, 2023 WL 5333236, at *4 (D.D.C. Aug. 18, 2023)), 35; ASCAP Initial Comments at 50; Authors Alliance Initial Comments at 18–19; DMLA Initial Comments at 17–18; Graphic Artists Guild Initial Comments at 1, 20; Daniel Gervais Initial Comments at 7; Fight for the Future, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 8 (Oct. 30, 2023) ("Fight for the Future Initial Comments"); Internet Archive Initial Comments at 10–11; Kernochan Center Initial Comments at 10–11; David Newhoff Initial Comments at 3; NMPA Initial Comments at 29–30; Seth Polansky Initial Comments at 29; Copyright Alliance Initial Comments at 5.

[174] Google LLC, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 12 (Oct. 30, 2023); *see also* Computer & Communications Industry Association ("CCIA"), Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 19 (Oct. 30, 2023) ("CCIA Initial Comments") ("Computers don't need incentives; only people do. And existing incentives—both legal, such as copyrights and patents, and non-legal, such as first-mover advantages and a desire to supply a commercial need—will suffice to ensure the development of generative AI technologies."); AIPLA Initial Comments at 11; NMPA Initial Comments at 29 ("As a policy matter, copyright law should never protect purely AI-generated content that does not represent human expression. Existing copyright law rightfully incentivizes human creativity by granting protection to the 'the fruits of intellectual labor' that 'are founded in the creative powers of the mind.'"); Xiyin Tang et al., Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 10–11 (Oct. 30, 2023) ("Xiyin Tang et al. Initial Comments") ("The artificial intelligence itself needs no incentive, as it is programmed to create, and needs only human prompting to generate works. The only other party that could need the incentive of copyright would be the users of AI systems. However, creation of works using AI technology requires substantially less time and effort than most human created works. Humans receive copyright protection for their works to balance against the cost of creating those works, and the risk in investing so much time and resources only for another party to copy the finished product. With AI-created works, 'both the fixed and variable costs of producing each copyrightable article are effectively zero, which allows producers to compete with imitators even absent legal protection.'" (citations omitted)).

[175] Pamela Samuelson et al. Initial Comments at 3. *See also* A2IM-RIAA Joint Initial Comments at 4 (quoting *Thaler v. Perlmutter*, No. 22-cv-1564, 2023 WL 5333236, at *4 (D.D.C. Aug. 18, 2023)); Association of American Publishers ("AAP"), Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 31–32 (Oct. 30, 2023) ("AAP Initial Comments"); CCIA Initial Comments at 19; Internet Archive Initial Comments at 10–11 ("The traditional policy foundations for extending copyright protection generally do not apply in the case of AI-generated material. There is no evidence that copyright law provides necessary incentives for the creation of AI-generated works, and regardless,

Several commenters asserted that there appear to be sufficient incentives for AI companies under existing law.[176] Some pointed out that the exponential growth of AI technologies—even in the absence of copyright protection—indicates that their developers do not need copyright incentives to produce these technologies.[177] "As machine learning practitioners," the AI company Hugging Face, stated: "[W]e find that very little to no innovation in generative AI is driven by the hope of obtaining copyright protection for model outputs. The incentives for innovation already exist without modifying copyright law."[178]

Finally, many expressed concern that providing legal protection to AI-generated content would discourage human authorship. Representatives of copyright owners maintained that the proliferation of legally protected AI-generated outputs would stifle creativity, leading to an overall decrease in human-authored works available to the public because humans will be disincentivized to create.[179] For example, the Copyright Alliance predicted that "[i]f . . .

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the constitutional foundations of copyright make clear that its goal is to incentivize human authorship."). *But see* Dallas Joder Reply Comments at 4 (predicting that self-aware AI might someday "rationally respond to [intellectual property ("IP")] incentives just like humans," such that they should be "permitted to keep and profit from the fruits of their creativity").

[176] A2IM-RIAA Joint Initial Comments at 35; AAP Initial Comments at 31–32; AIPLA Initial Comments at 11 ("At this time, it does not appear that legal protection for AI-generated outputs is critical to incentivizing the creation of AI technologies and systems; and the copyrightability of the AI system itself is sufficient."); CCIA Initial Comments at 19; Copyright Alliance Initial Comments at 95–96. Commenters identified several incentives, separate from any potential legal protection in AI-generated outputs, that encourage the development of AI technologies. *See, e.g.*, R Street Institute, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 10 (Oct. 30, 2023) ("R Street Initial Comments") ("Existing copyright protection for computer code does offer some incentives for the development of generative AI technologies."); Xiyin Tang et al. Initial Comments at 10–11 ("There are already incentives for the creation and development of AI technology through patent and copyright protection in the machinery and software, so the developers of AI have been sufficiently incentivized to create and improve their programs."); CCIA Initial Comments at 19 (discussing perceived commercial need and first-mover advantage); Anonymous AI Technical Writer Reply Comments at 15 (discussing the availability of venture capital and stock-market funding for AI development); DMLA Initial Comments at 17 (discussing patents and trade secrets); UMG Initial Comments at 81 (discussing AI as a tool or service).

[177] AIPLA Initial Comments at 11 (noting that AI systems were "generated and commercialized in the absence of any clear authority providing legal protection to the outputs, and the absence of such protections does not appear to have diminished the public's interest in consuming AI, nor service-providers' interest in providing it"); The Authors Guild Initial Comments at 33; Copyright Alliance Initial Comments at 95–96; Graphic Artists Guild Initial Comments at 19–20.

[178] Hugging Face, Inc., Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 13 (Oct. 30, 2023).

[179] Take Creative Control, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 2 (Oct. 18, 2023); Software Freedom Conservancy, Reply Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 2 (Dec. 6, 2023); Timothy Allen, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry (Sept. 6, 2023) ("Not only does it prevent people from being able to claim any kind of ownership to their designs, it also creates a great degree of consumer confusion as to which pieces are real and which are not, and could have a chilling effect on further creative fields (many of which are already deeply suffering economically)[.]"); Anonymous Artist, Reply Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 1, 10 (Dec. 5, 2023); Letter from UMG, Summary of *Ex Parte* Meeting on Apr. 22, 2024 Regarding the Office's AI Study, to U.S. Copyright Office 6, 14 (Dec. 3, 2024).

policymakers give incentives to generate AI content, the sheer volume and speed with which AI material is generated could obliterate the markets for much human creation."[180] It further asserted that "[o]ur popular culture will be overtaken by low quality, AI-generated works because the cost of human creation would be deemed too burdensome in comparison to using AI."[181] The Authors Guild cautioned that if "AI-generated works were entitled to the same protection as human-created works," the producers of this material would have an "unfair leverage in the marketplace" which "would further incentivize the distribution of AI-generated content to the public, crowding and diluting the marketplace to the point that copyright incentives no longer function as intended."[182] It expressed particular concern that "[t]he creative middle class professions . . . will be drowned out and decimated," and that "our literary works and arts will suffer tremendously as a result."[183]

Some commenters sought to achieve the perceived value of incentives outside of the copyright system, proposing that AI-generated works could be protected instead through the establishment of new *sui generis* rights. They suggested that a "specialized right could be tailored to address the unique aspects of AI creations, including the balance between human input and AI processing," the term of protection, and the identity of rightsholders, among others.[184]

Of the commenters who addressed *sui generis* rights specifically, most opposed the idea. They saw *sui generis* rights as raising similar concerns about incentives and the impact on

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[180] Copyright Alliance Initial Comments at 95; *see also* David Newhoff Initial Comments at 2–3 (explaining that vesting copyrights in corporate production of AI-generated material "pos[es] a threat to the careers of creative professionals" and that "[b]eyond posing a threat to the careers of creative professionals (and to the cultural value of creative work), at a certain point, the application of copyright law itself may become irrelevant and/or unconstitutional"); The Authors Guild Initial Comments at 34 ("Few human creators will be able to earn enough to sustain a profession and the human quality of work produced by professionals . . . will disappear."); Fight for the Future Initial Comments at 6. *But see* Donaldson Callif Perez Initial Comments at 2 ("Critics of artificial intelligence worry that the technology will eradicate jobs and be used to replace artists at the expense of human stories. Its proponents say that it is the way of the future and should be treated like just another tool in an artist's toolbox. The truth likely lies somewhere in the middle."); UMG, Reply Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 11 (Dec. 6, 2023); A2IM-RIAA Joint Initial Comments at 35.

[181] Copyright Alliance Initial Comments at 95.

[182] The Authors Guild Initial Comments at 34.

[183] *Id.*

[184] ImageRights International, Inc. ("ImageRights"), Reply Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 9 (Dec. 6, 2023) ("ImageRights Reply Comments"); *see also* Seth Polansky Initial Comments at 29 (suggesting shorter term for AI-generated material and clearer definition of who owns rights in outputs); Public Knowledge, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 19 (Oct. 30, 2023) (arguing that benefits of a *sui generis* right "may include faster and cheaper registration, and a lowered standard of documentation to illustrate which parts are attributable to AI, and (potentially) provenance of the work's AI components"); Rightsify Group LLC, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 10 (Oct. 30, 2023). A few advocated for *sui generis* protection specifically for AI model weights. *See* BLIP Initial Comments at 25–26; Van Lindberg Initial Comments at 5.

human authors.[185] Some also characterized past experience with *sui generis* regimes as problematic in various respects.[186]

In the Office's view, the case has not been made for additional protection for AI-generated material beyond that provided by existing law. As an initial matter, because copyright requires human authorship, copyright law cannot be the basis of protection for works that do not satisfy that requirement. As most commenters recognized, the incentives authorized by the Copyright Clause are to be provided to human authors as the means to promote progress. While Congress could instead consider establishing *sui generis* rights,[187] we do not find the policy arguments for additional protection to be persuasive.

To begin with, it is not clear that new incentives are needed. The developers of AI models and systems already enjoy meaningful incentives under existing law (as indicated by the rapid development and adoption of those models and systems). These incentives include patent, copyright, and trade-secret protection for the machinery and software, as well as potential funding and first-mover advantages. Moreover, we are not convinced that providing further incentives would promote progress. We share the concerns expressed about the impact of AI-generated material on human authors and the value that their creative expression provides to society. If a flood of easily and rapidly AI-generated content drowns out human-authored works in the marketplace, additional legal protection would undermine rather than advance the goals of the copyright system. The availability of vastly more works to choose from could actually make it harder to find inspiring or enlightening content. Indeed, AI

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[185] *See, e.g.*, The Authors Guild Initial Comments at 33 (arguing that *sui generis* rights "will dilute the market for human-created works and . . . does not serve the goals of copyright or the needs of society"); EWC Initial Comments at 17; AAP Initial Comments at 31–32; ABA-IPL Initial Comments at 13–14; ASCAP Initial Comments at 49; Authors Alliance Initial Comments at 18–19; Kernochan Center Initial Comments at 10; NMPA Initial Comments at 29; App Association Initial Comments at 7; Pamela Samuelson et al. Initial Comments at 4; AIPLA Initial Comments at 11; R Street Initial Comments at 10.

[186] Consumer Technology Association, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 6 (Oct. 30, 2023) ("The history of *sui generis* approaches has been that as technology advances, they either quickly become obsolete (e.g., Semiconductor Chip Protection Act of 1984), or may raise uncertainties and impediments pertaining to copyright.").

[187] *See, e.g.*, the Semiconductor Chip Protection Act of 1984, establishing *sui generis* rights in mask works. H.R. REP. NO. 98-781, at 7–8 (1984), *reprinted in* 1984 U.S.C.C.A.N. 5750, 5756–57; Trademark Clarification Act of 1984, Pub. L. No. 98-620, § 301, 98 Stat. 3335, 3347 (1984); 17 U.S.C. §§ 901–14. *See also* the Vessel Hull Design Protection Act, establishing *sui generis* protection for original designs of vessel hulls. Digital Millenium Copyright Act, Pub. L. No. 105-304, Title V, § 502, 112 Stat. 2860, 2905 (1998), *amended by* the IP and Communications Omnibus Act of 1999, Pub. L. No. 106-113, § 5005, 113 Stat. 1536, 1501A–593 (1999); 17 U.S.C. §§ 1301–32. These rights differ from copyright in terms of eligibility, ownership rights, registration procedures, term, and remedies. It is difficult, however, to extrapolate from these examples, since experience with their use is limited and the context of today's widely used AI technologies is quite different.

training itself is reportedly reliant on human-generated content, with synthetic data leading to lower-quality results.[188]

There are already indications that AI-generated content has impacted some creators' ability to be compensated for their work.[189] Musicians and songwriters, for instance, have been impacted by the proliferation of AI-generated content on streaming services. UMG reported that "content oversupply," produced by an estimated 170 million AI-generated music tracks, currently threatens to dilute human creators' royalties.[190] AI-generated works have also threatened to reduce the pool of royalties available to human creators through the Mechanical Licensing Collective.[191]

If authors cannot make a living from their craft, they are likely to produce fewer works. And in our view, society would be poorer if the sparks of human creativity become fewer or dimmer.

B. Empowering Creators with Disabilities

A number of commenters asserted that extending protection to AI-generated works would empower more individuals with physical and cognitive disabilities to create.[192] The

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[188] Kristian Hammond et al., *Degenerative AI: The Risks of Training Systems on their own Data*, NORTHWESTERN UNIV. CENTER FOR ADVANCING SAFETY OF MACHINE INTELL. (Sept. 6, 2024), https://casmi.northwestern.edu/news/articles/2024/degenerative-ai-the-risks-of-training-systems-on-their-own-data.html; Aatish Bhatia, *When A.I.'s Output Is a Threat to A.I. Itself*, N.Y. TIMES (Aug. 25, 2024), https://www.nytimes.com/interactive/2024/08/26/upshot/ai-synthetic-data.html.

[189] Researchers are beginning to seek to quantify the impacts of AI on artists' livelihoods. *See, e.g.*, International Confederation of Societies of Authors and Composers ("CISAC"), STUDY ON THE ECONOMIC IMPACT OF GENERATIVE AI IN THE MUSIC AND AUDIOVISUAL INDUSTRIES (Nov. 2024), https://www.cisac.org/services/reports-and-research/cisacpmp-strategy-ai-study; Gaétan de Rassenfosse et al., *Intellectual Property and Creative Machines*, NAT'L BUREAU OF ECON. RSCH. WORKING PAPERS, July 2024, Working Paper No. 32698, https://www.nber.org/papers/w32698.

[190] UMG Initial Comments at 13.

[191] Under a blanket license established in Section 115 of the Copyright Act, royalties for digital phonorecord deliveries of nondramatic musical works are paid into a pool for the mechanical licensing collective to divide and distribute to copyright owners. Although the Office has clarified that musical works that lack human authorship are not eligible for the blanket license, parties have attempted to obtain royalties for streams of AI-generated content. Letter from Suzanne V. Wilson, Gen. Couns. and Assoc. Register of Copyrights, U.S. Copyright Office, to Kris Ahrend, Chief Exec. Officer, The Mechanical Licensing Collective (Apr. 20, 2023), https://copyright.gov/ai/USCO-Guidance-Letter-to-The-MLC-Letter-on-AI-Created-Works.pdf. Such conduct has even been the basis of a criminal indictment for fraud. Press Release, U.S. Attorney's Office, Southern District of New York, North Carolina Musician Charged with Music Streaming Fraud Aided by Artificial Intelligence (Sept. 4, 2024), https://www.justice.gov/usao-sdny/pr/north-carolina-musician-charged-music-streaming-fraud-aided-artificial-intelligence.

[192] *See, e.g.*, BLIP Initial Comments at 24; ECPA Initial Comments at 8; Tom Yonge, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 33–36 (Sept. 18, 2023). Some commenters illustrated how generative AI has helped them create despite their disabilities. *See* Elisa Rae Shupe, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry Initial Comments at 1 (Oct. 27, 2023); Michael Summey, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 1 (Oct. 30, 2023).

specific applications they identified, however, involve the use of AI as a tool to assist in creating works, rather than to generate output without human authorship. The Brooklyn Law Incubator & Policy Clinic, for instance, cited functionalities like text-to-speech, visual art generative algorithms, and improving the written communication of those with cognitive disabilities.[193] Discussing creators with disabilities, another noted that "AI acts as a tool in the hands of an author," rather than a source of expressive content.[194]

The Office strongly supports the empowerment of all creators, including those with disabilities. We stress that to the extent these functionalities are used as tools to recast, transform, or adapt an author's expression, copyright protection would be available for the resulting work.[195] For example, the Office recently considered an application to register a sound recording by GRAMMY-winning country artist Randy Travis, who has limited speech function following a stroke.[196] The track was created based on the recording of a human voice, using "[a] special-purpose AI vocal model . . . as a tool . . . to help realize the sounds that Mr. Travis and the other members of the human creative team desired."[197] The result, which would have been infeasible without this technology, was a new track appearing to be sung in Travis's legendary voice. Because the sound recording used AI as a tool, not to generate expression, the Office registered the work.

The distinction between assistive uses and generative ones applies equally to creators with disabilities and other human authors. Copyright protection remains available where AI functions as an assistive tool that allows human authors to express their creativity.

C. Countering International Competition

A few commenters raised concerns about international competition. One organization warned that without copyright protection in the United States, "the scientific and creative communities will not be able to exploit the economic value of [AI-generated works]," which "may contribute to the U.S. lagging in the development of generative AI technologies and

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[193] BLIP Initial Comments at 24.

[194] *See* ECPA Initial Comments at 8 (discussing artists who are not able to hold a paintbrush and stating that creators with disabilities are "wielding [AI] to create intended expression").

[195] Registration Guidance for Works Containing AI-Generated Content Tr. at 4–5 (June 28, 2023), https://www.copyright.gov/events/ai-application-process/Registration-of-Works-with-AI-Transcript.pdf.

[196] *Where That Came From*, SR0001018989 (May 29, 2024).

[197] Letter from Steven Englund to U.S. Copyright Office (Oct. 28, 2024). In correspondence with the Office, the applicant further explained that the model "was developed specifically for th[e] project under Mr. Travis'[s] supervision using a curated set of vocal tracks from prior recordings by Mr. Travis" and that "the creative team [used the tool] to translate a sonically-tailored recording of James Dupré singing the composition 'Where That Came From' into a vocal track in Mr. Travis'[s] distinctive voice, while preserving the original cadence, phrasing, articulation, dynamics and other musical characteristics of Mr. Dupré's human performance." *Id.*

systems."[198] Another commenter similarly stated that if the U.S. does not adopt copyright protection for AI-generated outputs, "the global locus of cultural [intellectual property] generation will . . . shift to other nations with more AI-friendly policy environments."[199] This commenter further argued that excluding AI-generated works from copyright protection would not actually serve artists' interests,[200] as American artists instead "will be swept away by a public domain flood of [low-cost] foreign AI content" with which they cannot compete.[201]

Regardless of what other countries conclude, however, the United States is bound by our own Constitution and copyright principles. We should not abandon or distort those principles simply because other countries may not share them. Rather, we should make a persuasive case that a human-centered approach is good policy and inherent to copyright.

In any event, as described above, it remains to be seen how other jurisdictions' copyright laws will address generative AI. Commenters' concerns assume a substantial disparity in legal protection for AI-generated material, but no such disparity has yet clearly emerged. As a group of law professors acknowledged, while generative AI is likely to have widespread impact on human creativity, its effects on employment are difficult to predict.[202]

D. Providing Greater Clarity

Some commenters stressed the benefits of clarity and certainty. They posited that creators would be better off with certainty that their works produced using AI would be protected and available to license or sell. One commenter said that otherwise, the "commercial viability of the works made using AI tools is undermined [and] . . . [t]he adoption of these tools will also be impacted."[203] Some cautioned that, absent greater clarity, authors may question whether they own what they create using AI, whether they can license their content to other parties, whether they can register their works with the Office, and

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[198] The Knot Worldwide Inc. ("TKWW"), Reply Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 2 (Dec. 6, 2023) ("TKWW Reply Comments").

[199] Dallas Joder Reply Comments at 2.

[200] *See id.*

[201] *Id.* This commenter further cautioned that American AI startups will expend more financial resources on IP litigation than competitors in other countries that offer more expansive legal protection but did not explain how the volume of litigation would hinge on the copyrightability of AI-generated works. *See id.*

[202] *See* Pamela Samuelson et al. Initial Comments at 5.

[203] Microsoft and Github, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 10 (Oct. 30, 2023); *see also* IPO Initial Comments at 6–7 ("[I]f works created by humans using AI tools are not protected, that creates uncertainty for companies. Uncertainty leads to difficulty planning, developing, and investing, which could undermine the encouragement and promotion of arts and sciences."); ABA-IPL Initial Comments at 13–14; App Association Initial Comments at 6; ECPA Initial Comments at 7–8; Van Lindberg Initial Comments at 46; MPA Initial Comments at 59; TKWW Reply Comments at 2; SCA Robotics Initial Comments at 1.

whether their registration certificates will be entitled to a presumption of validity in an infringement action.[204]

A number of commenters urged the enactment of legislation to articulate the scope of protection through guidelines or standards.[205] One suggested establishing a legal presumption that an AI system's owner is the author of any output that the system may generate.[206] Another contended that the law should clarify that an "insignificant use of an AI tool that is otherwise substantially created by a human" does not make that work ineligible for copyright protection.[207]

The Office understands the desire for clarity around the copyrightability of AI-generated material. We do not believe, however, that legislation is necessary at this point. Much of the concern expressed focused on the assistive use of AI tools, and this Report seeks to provide assurances that such uses do not undermine protection. As to determining the copyrightability of AI outputs, the courts will provide further guidance on the human authorship requirement as it applies to specific uses of AI (including in reviewing the Office's registration decisions). Meanwhile, the analysis in this Part of the Report can help to shed light on how existing principles and policies apply.

Even if Congress were to consider addressing this issue through legislation, greater clarity would be difficult to achieve. Because the copyrightability inquiry requires analysis of each work and the context of its creation, statutory language would be limited in its ability to provide brighter lines. Unless and until future developments raise new problems, the Office does not recommend a change in the law.

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[204] *See* Sandra Aistars, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 10–11 (Oct. 30, 2023); Graphic Artists Guild Initial Comments at 2–3; Qualcomm Reply Comments at 6.

[205] BLIP Initial Comments at 22; CISAC, Comments Submitted in Response to U.S. Copyright Office's Aug. 30, 2023, Notice of Inquiry at 5–6 (Oct. 30, 2023); ImageRights Reply Comments at 8–9; INTA Initial Comments at 4–5; Seth Polansky Initial Comments at 27–28.

[206] Ryan Abbott Initial Comments at 18.

[207] ASCAP Initial Comments at 49.

V. CONCLUSION

Based on the fundamental principles of copyright, the current state of fast-evolving technology, and the information received in response to the NOI, the Copyright Office concludes that existing legal doctrines are adequate and appropriate to resolve questions of copyrightability. Copyright law has long adapted to new technology and can enable case-by-case determinations as to whether AI-generated outputs reflect sufficient human contribution to warrant copyright protection. As described above, in many circumstances these outputs will be copyrightable in whole or in part—where AI is used as a tool, and where a human has been able to determine the expressive elements they contain. Prompts alone, however, at this stage are unlikely to satisfy those requirements. The Office continues to monitor technological and legal developments to evaluate any need for a different approach.

The Office will provide ongoing assistance to the public on the copyrightability issues related to generative AI, including by issuing additional registration guidance and updating the relevant sections of the *Compendium of U.S. Copyright Office Practices*. In doing so, we will rely on the comments received in response to the NOI, judicial developments, and other relevant input.

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U.S. Copyright Office
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The U.S. Copyright Office's Copyright and Artificial Intelligence Report and additional information about the Office's AI initiative are available on the Copyright Office's website. Visit www.copyright.gov/AI for more information and to sign up for updates.